JANUARY, 1927

JAN 1 1 1927

Marine Engineering

and Shipping Age

A CONVERSION

BUSCH-SULZER

FOLLOWING successful sea trials at New York, December 1st, 1926, the Motorship E. T. Bedford left immediately on her maiden voyage.

Standard Oil Co. Tanker "E. T. Bedford"

15,000 D. W. T.—3000 B. H. P.

BUSCH-SULZER BROS.
DIESEL ENGINE CO.

ST. LOUIS, MO.

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How strong is an Oxwelded joint?*

IT IS NOT so much a question of how strong a welded joint can be made. Engineers are more interested in the strength of standard welded joints made under Linde procedure control.

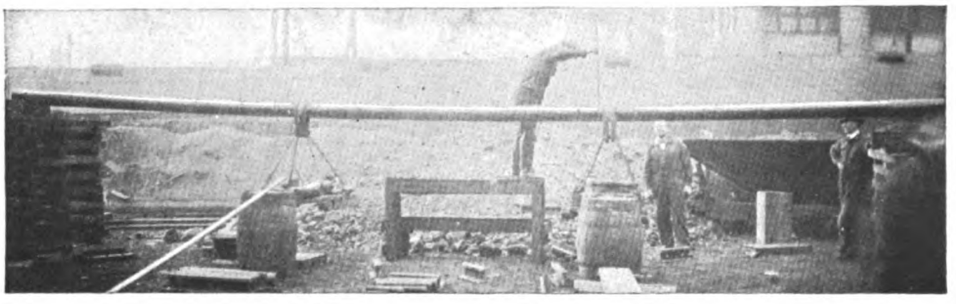
One good indication of welded strength is the necessity of using the highest quality flange or fire box steel in making test welds. Ordinary mild steel will give way before the tensile limit of the welded joint is reached.

A series of welded pressure vessels made under procedure control were tested to destruction by the Bureau of Standards. It was found the single vee oxwelds made with high grade soft iron wire average 42,400 pounds per square inch at failure. Double vee oxwelds of the same material give way at 50,800 pounds. Welds made with modern high test rod average 11,000 pounds more in both single and double vee welds.

To engineers familiar with the requirements of different kinds of construction, these figures should be convincing evidence of the reliability and strength of oxwelded joints made under Linde procedure controls.

Data on all phases of this subject are available at our main office.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
General Offices: Carbide and Carbon Building
30 East 42d Street, New York
37 PLANTS . . . . . 107 WAREHOUSES



LINDE OXYGEN

★ No. 1 of a series of advertisements on the engineering phases of oxy-acetylene welding and cutting. Send for the booklet: "Engineering and Management Phases of Oxwelded Construction."

Vol. XXXII **No. 1**
Published Monthly by Simmons-Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00; foreign countries, $4.00 a year, or, 17.0, through the London Office, single copy 35 cents or, 1.6d. Entered at New York, N. Y., as second-class matter.

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Cracovia, Lloyd Triestine; *Fontainbleau,* Messageries Maritime; *Secundus,* Armateurs Francais; *Pacific Shipper,* Furness Withy & Co., Ltd.; *Pacific Trader,* Furness Withy & Co., Ltd.; *Pacific Commerce,* Furness Withy & Co., Ltd.; *Sicillian Prince,* Furness Withy & Co., Ltd.: *Brazilian Prince,* Furness Withy & Co., Ltd.; *Asiatic Prince,* Furness Withy & Co., Ltd.; *Chinese Prince,* Furness Withy & Co., Ltd.; *Malayan Prince,* Furness Withy & Co., Ltd.; *Japanese Prince,* Furness Withy & Co., Ltd.; *Javanese Prince,* Furness Withy & Co., Ltd.; Engines K. 10, K. 11, K. 12, K. 14, Furness Withy & Co., Ltd.; *Vinemoor,* Walter Runc Sons; *Westmoor,* Walter Runciman & Sons; *Swanley,* Harris & Dixon, Ltd.; *Iossifoglu,* Ionian Marine & L tme *Ernaren,* Transatlantic SS. Co.; *Yngaren,* Transatlantic SS. Co.; *Itaguassu,* Cie Nacional "Co Line, Ltd.; *Silverfir,* Silver Line, Ltd.; *Silvercedar,* Silver Line, Ltd.; *Silveray,* Silver Ltd.; *Silverlarch,* Silver Line, Ltd.; *Silverash,* Silver Line, Ltd.; *Silverhazel,* Silve Ltd.; *Silverbell,* Silver Line, Ltd.; *Silverbeech,* Silver Line, Ltd.; *Silvermaple* Sons; *Tynefield,* Hunting & Sons; *Marinula,* Anglo-Saxon Petroleum Co.; *M egara,* Anglo-Saxon Petroleum Co.; *Marsyas,* Anglo-Saxon Petroleum Co.; *A ylsses,* Anglo-Saxon Petroleum Co.; *Bullmouth,* Anglo-Saxon Petroleum Co.; glo-Saxon Petroleum Co.; *Wieringen,* Rotterdamsche Lloyd; *Indrapoera,* Rotterdamsche Lloyd e Lloyd; *Aorangi,* Union SS. Co. of New Zealand; *Limerick,* Union SS. Co. of New Zealand; ng Company; *Port Dunedin,* Commonwealth & Dominion Line; *Port Hobart,* Commonwealth Contract 864, Commonwealth & Dominion Line; Contract 515, Commonwealth & Dominion Lin Hamburg Sud Amerika Line; *Monte Olivia,* Hamburg Sud Amerika Line; *Asturias,* Royal Mail Steam *Alcantara,* Royal Mail Steam Packet Co.; *Carnarvon Castle,* Union Castle SS. Co.; *Lumen,* H. E. Mos *labar,* Burns Phelp & Co.; *Durenda,* British India Line; *Domala,* British India Line; *Dumana,* British In *ontferland,* Royal Dutch Lloyd; *Athelprince,* British Molasses Co.; *Athelchief,* British Molasses Co.; *Java* Mowinckels Rederi; *British Chemist,* British Tanker Co.; *British Diplomat,* British Tanker Co.; *Minna Hor* rn Line; *Waldraut Horn,* H. C. Horn Line; *Frida Horn,* H. C. Horn Line; *Marie Horn,* H. C. Horn Line Hamburg Amerika Line; *Friesland,* Hamburg Amerika Line; *City of Stockholm,* Hall Line, Ltd.; *Crem* aketvaart Maatschappij; *Rooseboom,* Kon. Paketvaart Maatschappij; *Van Heutsz,* Kon. Paketvaart Maat *Verak,* Kon. Paketvaart Maatschappij; *Van Goens,* Kon. Paketvaart Maatschappij; C *elman,* Kon. Paketvaart Maatschappij; *Duymaer Van T* Kon. Paketvaart Maatschappij; *Van Dieman,* Kon. Pak vaart Maatschappij; *Patras,* Kon. Paketvaart Maatschapp *Bintang,* Stoom. My "Nederland"; *Ontariolite,* Imperial o.; *Pendrecht,* Van Ommeren SS. Co.; *Woensdrecht,* Van eren SS. Co.; *Florida Maru,* Kawasaki Dockyard Co. *La* ; White Star Line; *Eros* (Yacht); *Storsten,* Tonsberg eri; *Alcinous,* Alfred Holt & Co.; *Phrontis,* Alfred Holt & ; *Shropshire,* Bibby Brothers, Ltd.; *Cheshire,* Bibby Brothe d.; *Accra,* Elder Dempster & Co., Ltd.; *Apapa,* Elder Dem & Co., Ltd.; *Mongolia,* P. & O. Steam Navigation Co. *denburg,* Stoom, My "Oostzee"; British Tanker Co., Ltd *npress of Australia,* Canadian Pacific SS.; *Lautaro,* Pacific m Nav. Co.; No. 159, Lloyd Nacional de Brazil; Nos. 73 6, 737, 738, Elder Dempster & Co., Ltd.; *Alemeda* (Blue Liner), Cammell Laird Birkenhead; *Workman Clark* (B t), Commonwealth & Dominion Line; *Anglo-Saxon,* Harla Wolff; *Anglo-Saxon,* Harland & Wolff; *McAndrews & Co.,* land & Wolff; *McAndrews & Co.,* Harland & Wolff; *Harde La Marea,* United Fruit Co.; *Commonwealth Dominion Lin* allsend Slipway & Eng. Co.; Tietjen & Lang Drydock Co. Hunter & Wigham; Dredge *New York,* United Dredging Engines 508 and 509, Cramp's Ship Yard; *Frank Lynch;* Y t *Aloha,* Tams & King; *W. Vancouver No. 6,* West Vanc r Ferries; *Missourian,* American Hawaiian SS. Co.; *Luxp e,* C. D. Mallory & Co., Inc.; *Youngstown,* U. S. Shipping oard; Submarine V-2, U. S. Navy; *C. B. Harris,* U. S. E ; *Tuxpanoil,* McAllister Bros. *Dorothy Luckenbach,* Lucke h SS. Co.; *Bird City,* International Freighting Corp.; *M ui,* Matson Navigation Co.; Dredge *Glackamas,* Port of P nd; *Phoenix,* Amer. Tanker Corp.; *Hawaiian Standard,* S lard Oil Co.; *Alaskan Standard,* Standard Oil Co.; *Charl son,* Standard Oil Co.; *Harper,* Standard Oil Co.; *Carriso,* Oceanic SS. Co.; *Lio,* McAllister Bros.; *Robinson,* Bradley Transp. Co. (American SB. Co.); *Benson Ford,* Ford Motor Co.; *Henry Ford,* Ford Motor Co.; *Cherokee,* Clyde SS. Co.; *Seminole,* Clyde SS. Co.; *Winona,* U. S. Shipping Bd.; *Hampton Roads,* U. S. Shipping Bd. (McAllister Bros.); *Lio,* General Petroleum Corp.; *Caspar,* Inter. Freighting Corp.; *Carenco,* C. D. Mallory & Co., Inc.; *Ala,* Black Diamond SS. Co.; *Betterton,* U. S. Shipping Bd.; *Cockaponset,* U. S. Shipping Bd.; *Lehigh,* No. Atlantic & Western SS. Co.; *Meanticut,* Page & Jones; *Cold Harbor,* No. Atlantic & Western SS. Co.; *City of St. Joseph,* C. D. Mallory & Co., Inc.; *Jacksonville,* Grace Steamship Line; *Cubore,* Ore SS. Co.; *Bidwell,* Sun SB. Co.; *Vincent,* U. S. Shipping Bd.; Ferry Boat, Golden Gate Ferry Co.; David Whitney Yacht *Sumar,* Tebo Yacht Basin; Dredge *Crest,* Great Lakes Dredge Co.; *Silverlarch,* Kerr SS. Co.; D. P. Davis Yacht, Tebo Yacht Basin; Dredge *Black Diamond,* Hill Dredging Co.; *La Playa,* United Fruit Co.; Manitowac SB. Corp.; *Steel Vender,* Isthmian SS. Co.; *Steel Motor,* Isthmian SS. Co.; *Steel Chemist,* Isthmian SS. Co.; *Steel Electrician,* Isthmian SS. Co.; Dredge *Margate,* Hill Dredging Co.; *Beulah,* O'Connor-Harrison Co.; Tietjen & Lang Drydock Co.; *M. S. Tampa,* U. S. Shipping Bd.; *M. S. West Honaker,* U. S. Shipping Bd.

IT IS SIGNIFICANT that the world's most important marine powers depend on the Sharples Super Centrifuge for positive *purification* of their lubricating oil and Diesel fuel oil; no other device or system can do the work of a Sharples—at the same low cost and high efficiency.

Every Diesel Engine—on land or on sea—deserves the continuous protection of a Sharples Super Centrifuge.

SHARPLES
A GREAT FORCE

2316 Westmoreland St., Phila., Pa.

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FEBRUARY, 1927

Marine Engineering and Shipping Age

A battery you can count on
Sustained speed all day long—plenty of reserve power for extra-tough hauls—years of active, efficient life—rugged strength to stand up under hard usage. These are qualities you can always count on getting when you buy an Exide-Ironclad Battery.
The Electric Storage Battery Co.
Philadelphia, Pa.
Exide Batteries of Canada, Limited, Toronto
Exide
IRONCLAD
BATTERIES
100
BALCOM

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Armies of Oxwelded Tanks

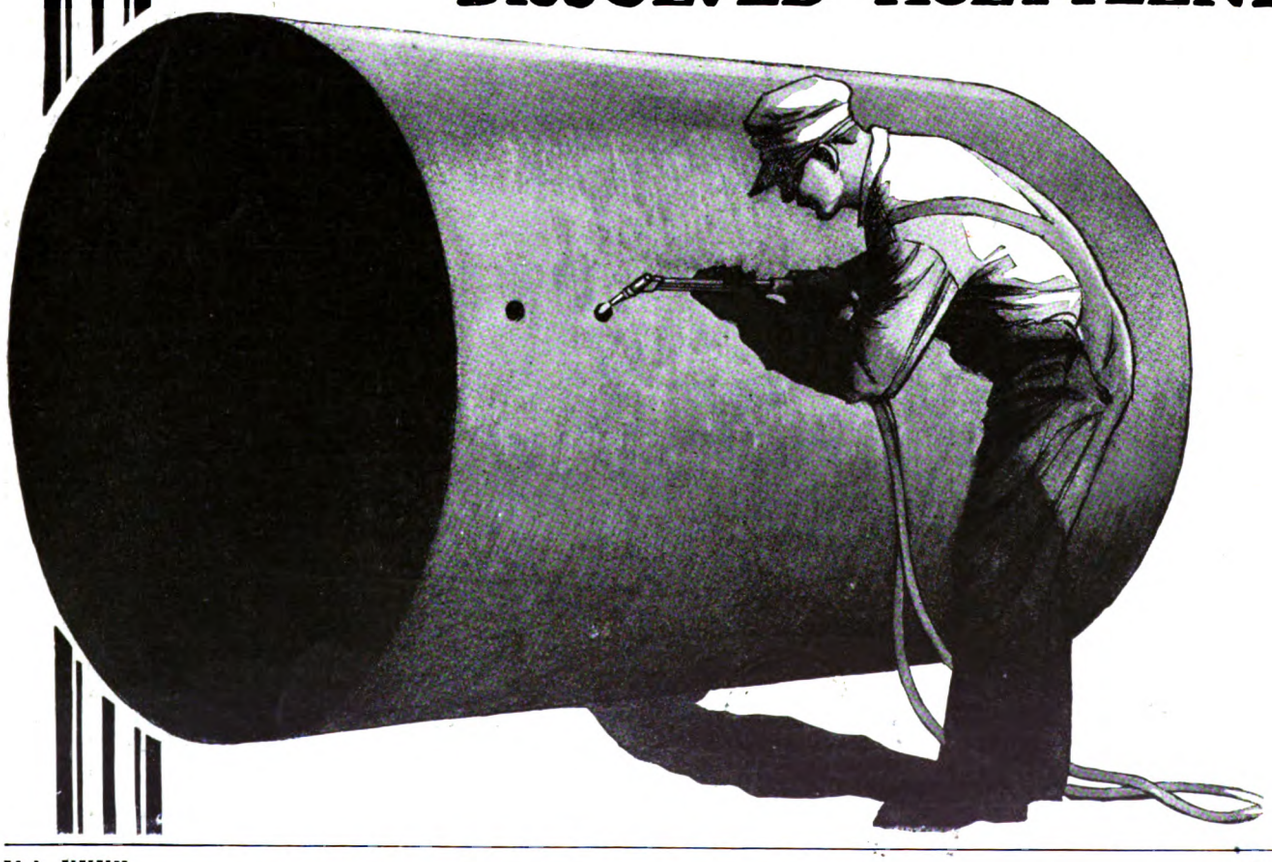
In every industry where the storage of liquids is an important problem, welded tanks are used because they are ultimately more economical. The longer life, greater resistance to strain, and complete elimination of both leakage and maintenance, have been responsible for their popularity.

The field storage tanks in the petroleum oil fields, 10 ft. in diameter and 30 ft. high, are commonly welded. The long cylindrical storage tanks so frequently used in the chemical and other process industries, gas station tanks and truck tanks are welded now, and most small complicated traps and fittings can be made simple and compact only by the oxy-acetylene process.

If you are not using oxwelded tanks and oxwelded equipment you should investigate the economies possible in construction, maintenance and replacement.

THE PREST-O-LITE COMPANY, Inc.
Unit of Union Carbide and Carbon Corporation
General Offices: Carbide and Carbon Bldg., 30 East 42d St., New York
31 PLANTS—101 WAREHOUSES

Prest-O-Lite
DISSOLVED ACETYLENE



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Security plus Wear

THERE is a sense of security about pure Manila rope that has become traditional among men of the sea the world over — the yellow and blue registered trade marks of Fitler guarantees pure Manila rope.

Fitler rope has repeatedly demonstrated its wear resisting properties, tough, strong, water repellent, it is extremely pliable.

When you want maximum rope service at minimum replacement cost specify Fitler rope—there's a marked difference.

Stocks carried at the principal Atlantic, Pacific and Great Lakes ports.

The EDWIN H. FITLER CO.

(*Philadelphia Cordage Works*)

517 ARCH STREET **PHILADELPHIA, PA.**

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MARCH, 1927

Marine Engineering and Shipping Age

MAR 1 1 1927

LUX TRADE MARK

FOR TANKERS OF ALL NATIONS

LUX TRADE MARK

AMERICAN
Gulf of Venezuela
J. W. Van Dyke
E. T. Bedford
C. M. Leffler
J. H. Senior
Gulfcrest
Gulfpride
Solitaire
Vistula
Baltic
Lio
Etc.

FRENCH
Gen. Gassouin

ITALIAN
Meteor
Ardor
Etc.

GERMAN
Persephone
Prometheus
Thalia
Urania
Leda
Etc.

BRITISH
Trontolite
Reginolite
Ontariolite
Montrolite
Canadolite
Etc.

DUTCH
Denn Haag
Rotterdam
Etc.

SWEDISH
Sweithoid

ALL EQUIPPED WITH LUX
THE UNIVERSAL FIRE PROTECTION

Walter Kidde & Company, Inc.
140 Cedar Street
New York

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That "personal equation" in welding —★

THERE IS a widely spread notion that welded joints are satisfactory only if you have an unusually good welder and that such welders are rare as jewels.

Let us straighten out this idea once and for all. Good welders are necessary, but with proper supervision good welders can be developed in a comparatively short time. Here, for example, are test records of single vee welds made with high grade soft iron wire by an average student during the first months of his employment:

Month	No. of Welds Tested	Average Tensile Strength
June, 1926	4	22,000
July	3	39,000
August	5	44,000
September	4	49,000
October	3	49,400

And when it is remembered that 47,000 is the average tensile strength of single vee joints with high grade soft iron wire, it can be assumed that a welder having a reasonable training period, working under proper shop conditions and competent supervision, would be able to turn out work meeting any reasonable specification.

If you exercise the same kind of care in purchasing or manufacturing welded equipment that is customary in purchasing machinery, and if you select the shop or the welder properly, you can rely on welded construction.

THE LINDE AIR PRODUCTS CO.
Unit of Union Carbide and Carbon Corporation
General Offices: Carbide and Carbon Bldg.
30 East 42d Street, New York

37 PLANTS · · · · 107 WAREHOUSES

LINDE OXYGEN

★ No. 3 of a series of advertisements on the engineering phases of oxy-acetylene welding and cutting. Send for the booklet entitled: "Engineering and Management Phases of Oxwelded Construction."

Vol. XXXII **No. 3**

Published Monthly by Simmons-Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00; foreign countries, $4.00 a year, or, 17.0, through the London Office, single copy 35 cents or, 1.6d. Entered at New York, N. Y., as second-class matter.

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Don't invite rope failure—

Fitler rope is guaranteed!

ROPE failure is always costly—accidents, delays and damage of every description follow in its wake, but—there is a preventive, the protection of the yellow and blue registered trade mark in all Fitler Pure Manila Rope.

This is your positive guarantee of always securing the maximum service that rope can give under every condition of service, no matter how unusual.

Fitler rope, strong, tough, flexible and water repellant, is wear resisting to the highest degree; that is why it is far cheaper in the end to specify Fitler wherever rope is used. It is always easy to obtain.

Stocks carried at the principal Atlantic, Pacific, Gulf and Great Lakes ports.

The EDWIN H. FITLER CO.

(*Philadelphia Cordage Works*)

517 ARCH STREET PHILADELPHIA, PA.

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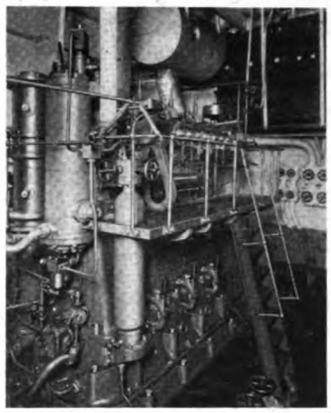
APRIL, 1927

Marine Engineering and Shipping Age

From *Times, New York City*
Feb. 1, 1927

Board Buys More Diesel Engines.

The receipt of a fourth repeat order for auxiliary Diesel oil engines from the United States Shipping Board was announced yesterday by the Worthington Pump and Machinery Corporation. This brings the total of Diesel auxiliaries ordered from Worthington since April, 1925, to twenty-one. The engines are all two-cycle single-acting Diesels of the air-injection type, and are employed for operating engine-room and dock machinery and supplying electricity for lighting purposes.



Diesel Electric Power for Marine Uses

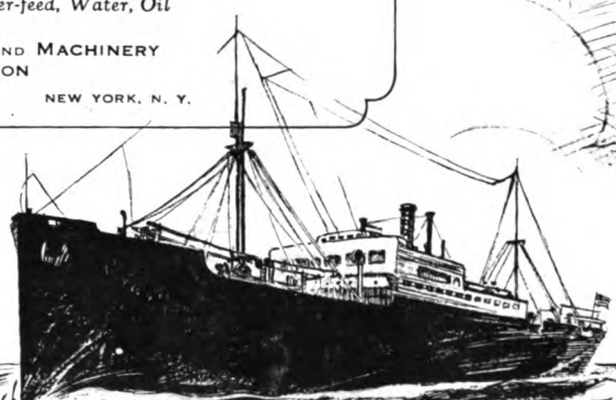
This simple type of Diesel engine is especially well suited to supply power for electric driven auxiliaries. Long life is assured by the cross-head construction with force-feed lubrication to all bearing surfaces. Made also in direct reversible marine types.

Products:

Pumps Compressors Condensers
Oil and Gas Engines Feedwater Heaters
Meters — Boiler-feed, Water, Oil

WORTHINGTON PUMP AND MACHINERY CORPORATION

115 BROADWAY NEW YORK, N. Y.



WORTHINGTON

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International Combustion Eng. Corp. Purchases Heine Boiler Co.

THE International Combustion Engineering Corporation recently purchased the capital stock of the Heine Boiler Company, one of the oldest and leading watertube boiler manufacturers in the United States. This acquisition gives the International Combustion Engineering Corporation large boiler shop facilities at St. Louis and Phoenixville, Pa.

TRADE PUBLICATIONS

GAS ANALYSIS INDICATOR-RECORDER.—The C. J. Tagliabue Manufacturing Company, Brooklyn, N. Y., has issued a bulletin describing the new Tag-Mono-Duplex automatic gas analysis indicator-recorder.

WOLVERINE DIESEL ENGINES.—The Wolverine Motor Works, Inc., Bridgeport, Conn., has extended its line of oil engines to include sizes down to 25 brake horsepower. These engines are described briefly in a bulletin issued by the company.

MARINE STEAM GENERATING SET.—An improved marine steam generating set built by Engberg's Electric & Mechanical Works, St. Joseph, Mich., is described in a bulletin now being issued. The subject matter of the bulletin consists essentially in listing the distinctive features of this type unit.

ARC WELDING ACCESSORIES.—The General Electric Company, Schenectady, N. Y., has issued a folder describing various accessories for use in arc welding, including a hand shield for operators, helmets for operators, various types of holders, scratch brushes, welding table and the like.

DUPLEX STRAINERS.—The Morton Engineering Company, Philadelphia, Pa., is distributing a folder descriptive of the "MECO" duplex or twin strainer. This strainer, which is of the suction type, is so designed that one strainer may be cleaned while the other is in operation.

SIGNAL EQUIPMENT.—Charles Cory & Son, Inc., New York, is now distributing a bulletin on signal equipment including annunciators, bells, buzzers and the like. The subject matter treats of audible and visible fire alarms, call bells, automatic winding signals, stewards, nurses, attendants and messenger calls and the like.

JACK-O-LITE.—This is a new type of electric lantern which is operated by a magneto type generator which furnishes current for a standard 2.2 volt Mazda bulb. The Slaymaker Manufacturing Company, Philadelphia, Pa., outlines the many uses for the Jack-O-Lite both ashore and for marine service in a bulletin recently issued.

INTERNATIONAL STEAM SEPARATOR.—The Argus internal steam separator, manufactured by the Carew-Greene Engineering Company, Inc., New York, is the subject of a catalogue now being distributed. Details of the development of this separator from the first installation in 1911 to the present time for railway, stationary and marine service are in the catalogue.

OXYGEN MANIFOLDS.—With the increasing use of pipe line distribution of oxygen and acetylene in industrial and other plants the Air Reduction Sales Company has developed the Airco Davis-Bournonville Oxygen manifold which may be obtained for any number of cylinders desired. These manifolds have been made the subject of a pamphlet recently issued by the Air Reduction Sales Company.

BURMEISTER & WAIN SHIPYARD.—Burmeister & Wain, Ltd., engineers and shipbuilders, Copenhagen, Denmark, has issued a catalogue describing the shipyard which is located at the entrance to the harbor of Copenhagen. The layout and equipment of the plant are well shown by means of numerous photographs of the yard and shops. A large portion of the catalogue is taken up with photographs and deck plans of numerous well known vessels built by Burmeister & Wain.

BUSINESS NOTES

Charles A. Devlin & Company have been appointed Philadelphia representatives for the American Republics Line, representing the interests of C. H. Sprague & Sons, Boston, Mass., who recently obtained the allocation of the service withdrawn from the management of Moore & McCormack, who operated the ships for a year for the Shipping Board.

Garvey & Palmer, Inc., 420 East 3rd Street, Los Angeles, Cal., have been appointed Pacific coast marine representatives by the Foos Gas Engine Company, Springfield, Ohio. The firm of Garvey & Palmer will have charge of the distribution of Foos engines particularly in connection with marine installations.

The International Combustion Engineering Corporation recently announced its removal to the new International Combustional Building, Madison Avenue, corners of 35th to 36th streets, New York. The American subsidiaries of this company, including the Combustion Engineering Corporation, the Ladd Watertube Boiler Company and Raymond Bros. Impact Pulverizer Company, Inc., have also been allotted space in this building.

The Bridgeport Brass Company, Bridgeport, Conn., has announced that Raymond H. Liefeld has been appointed to the sales staff of the Bridgeport Brass Company, handling flush valves made by the company.

Peter A. Sensenig, who has been connected during the past year with the Ingersoll-Rand Company, and assigned to do their advertising and publicity on marine and stationary oil engines, has established the Peter A. Sensenig Service Bureau, at 10 West Scott avenue, Rahway, N. J.

The Lidgerwood Manufacturing Company of New York has established an office and warehouse at Jacksonville, Fla., 401 Barnett National Bank Building. This office will be in charge of L. C. Hastings, who has been traveling this territory for several years, selling the Lidgerwood line of winches.

R. H. Farley, who retired recently from active service as passenger traffic manager of the International Mercantile Marine Company, New York, has opened an ocean travel agency 535 Fifth avenue, in association with his son, R. S. Farley, under the name of the Farley Travel Agency. The Farley Travel Agency will represent the leading transatlantic and coastwise lines.

Marine Societies

America

American Marine Association. 30 Church St., New York. President—Col. E. A. Simmons.

American Marine Standards Committee. Chairman, Colonel E. A. Simmons. Secretary, A. V. Bouillon, Division of Simplified Practice, Department of Commerce, Washington, D. C.

American Society of Marine Designers. Secretary—B. G. Barnes, 202 Kendrick Ave., Quincy, Mass.

American Society of Marine Engineers. 605 Market St., San Francisco, Calif. President—Henry F. Gelhaus. Secretary—Wm. H. Thille.

American Society of Naval Engineers. Navy Department, Washington, D. C. Secretary-Treasurer—Commander H. B. Hird, U. S. N., Bureau of Engineering, Navy Department, Washington, D. C.

American Steamship Owners' Association. 11 Broadway, New York. President—Alfred Gilbert Smith.

Atlantic Coast Shipbuilders' Association. 1600 Walnut Street, Philadelphia, Pa. Secretary—C. S. King.

Council of American Shipbuilders, Inc. 30 Church St., New York. President—Homer L. Ferguson. Secretary-Treasurer—Henry C. Hunter.

Jersey Marine Club, 4th and River streets, Hoboken, N. J. President—Col. Bartlett.

Lake Carriers' Association. President—J. S. Ashley. Secretary—George A. Marr, Rockefeller Building, Cleveland, O.

National Association of Engine and Boat Manufacturers. 29 West 39th Street, New York City. Secretary—Ira Hand.

National Association of Masters, Mates and Pilots. National Secretary—M. D. Tennis-wood, 308 Vine St., Camden, N. J.

National Marine Engineers' Beneficial Association. Headquarters, 311-315 Machinists Building. Washington, D. C. President—Wm. F. Yates. Secretary—Albert L. Jones.

National Merchant Marine Association. Munsey Bldg., Washington, D. C. President—Hon. J. E. Ransdell.

Neptune Association. 21 Pearl St., New York City. Secretary-Treasurer—Captain John F. Milliken.

New York and New Jersey Dry Dock Association, 111 Broadway, New York. President—Jonathan Moore.

Ocean Association of Marine Engineers. 15 Whitehall St., New York. Secretary—Bert L. Todd.

Port of New York Authority. 75 West Street, New York. Chairman—George S. Silzer. Secretary—Wilson J. Vance.

Society of Naval Architects and Marine Engineers. 29 West 39th Street, New York. Secretary and Treasurer—Daniel H. Cox.

The Maritime Association of the Port of New York. 78 Broad St., New York City. President—John Dowd. Secretary—John F. Manning.

The New York Tow Boat Exchange. 11 Moore St., New York. Manager—Charles A. Mason.

The Propeller Club of the Port of New York. President—Edward A. Colson, 85 Liberty Street, New York. Secretary—William C. Gray, 17 Battery Place, New York.

United States Naval Institute. Naval Academy, Annapolis, Md. Secretary and Treasurer—Captain H. A. Baldridge, U. S. N.

United States Ship Operators' Association. 149 Broadway, New York. President—Winchester Noyes.

Canada

Grand Council N. A. of M. E. of Canada. Grand Secretary-Treasurer—W. A. MacDonald, 62 Albert St., Halifax, N. S.

Great Britain

Institute of Marine Engineers, Incorporated. 85/88 The Minories, London, E.1.

Institution of Engineers and Shipbuilders in Scotland. 39 Elmbank Crescent, Glasgow.

Institution of Naval Architects. Adelphi Terrace, London, W. C.

Northeast Coast Institution of Engineers and Shipbuilders. Bolbec Hall, Westgate Road, Newcastle-on-Tyne.

France

Association Technique Maritime et Aéronautique. Secrétariat Général—7, rue de Madrid, Paris (8e).

Italy

Collegio Degli Ingegneri Naval e Meccanici in Italia.

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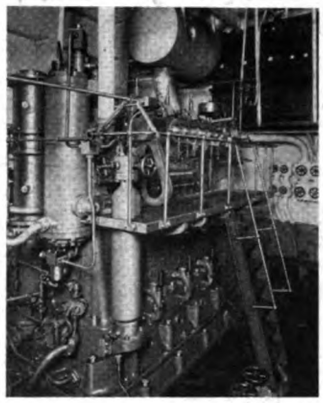
APRIL, 1927

Marine Engineering and Shipping Age

From Times, New York City
Feb. 1, 1927

Board Buys More Diesel Engines.

The receipt of a fourth repeat order for auxiliary Diesel oil engines from the United States Shipping Board was announced yesterday by the Worthington Pump and Machinery Corporation. This brings the total of Diesel auxiliaries ordered from Worthington since April, 1925, to twenty-one. The engines are all two-cycle single-acting Diesels of the air-injection type, and are employed for operating engine-room and dock machinery and supplying electricity for lighting purposes.



Diesel Electric Power for Marine Uses

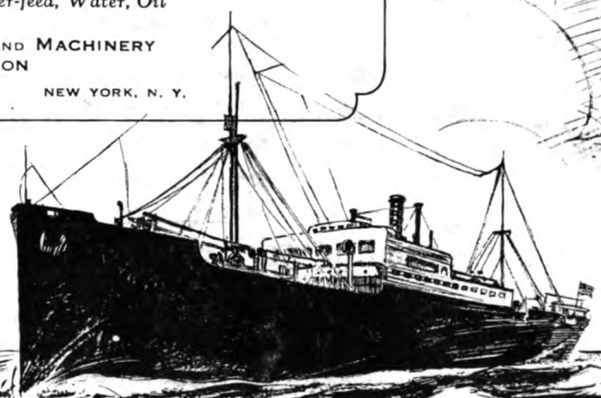
This simple type of Diesel engine is especially well suited to supply power for electric driven auxiliaries. Long life is assured by the cross-head construction with force-feed lubrication to all bearing surfaces. Made also in direct reversible marine types.

Products:

Pumps Compressors Condensers
Oil and Gas Engines Feedwater Heaters
Meters — Boiler-feed, Water, Oil

WORTHINGTON PUMP AND MACHINERY CORPORATION

115 BROADWAY NEW YORK, N. Y.



WORTHINGTON

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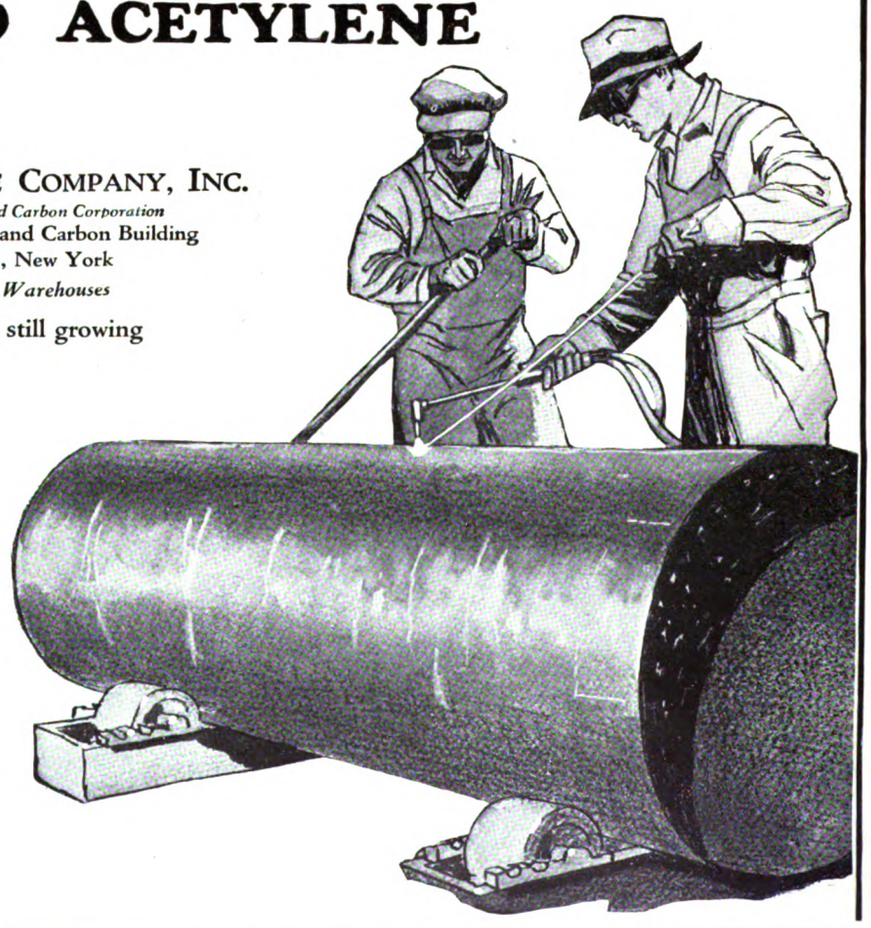
Large jobs and small— *by oxwelding*

The modern cement kiln is an industrial mammoth 8 ft. in diameter and 125 ft. long and made of heavy 5/8" steel plates. It can be completely constructed by the oxy-acetylene welding process, and those so made are giving exceptionally good service. By the same method the tiny contact wires of a radio tube are joined together.

No other process of construction works so satisfactorily under different conditions. The kind, the analysis and the thickness of the metal to be welded may vary widely. The type of construction may be rugged or delicate, approximate or precise, yet the oxy-acetylene process is so flexible that it is easily adapted to every special need.

Prest-O-Lite dissolved acetylene is the original commercial welding gas. Because of it, much of the remarkable development of oxwelding and cutting has been possible.

Prest-O-Lite
DISSOLVED ACETYLENE



THE PREST-O-LITE COMPANY, INC.
Unit of Union Carbide and Carbon Corporation
General Offices: Carbide and Carbon Building
30 East 42d St., New York
31 Plants—101 Warehouses
22 years old and still growing

Vol. XXXII **No. 4**
Published Monthly by Simmons-Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00; foreign countries, $4.00 a year, or, .17.0, through the London Office, single copy 35 cents or, 1.6d. Entered at New York, N. Y., as second-class matter.

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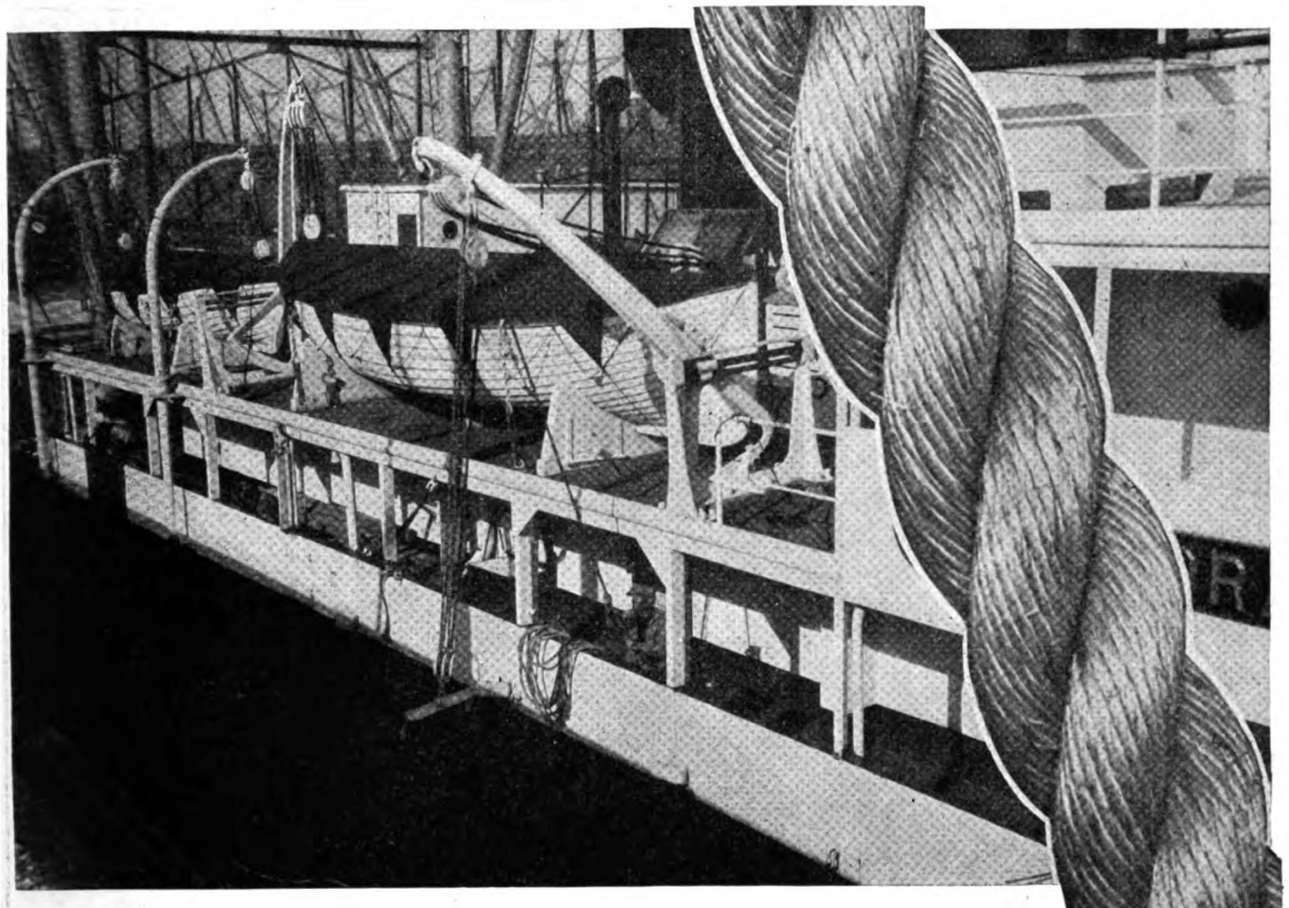

Greater Service—Less Risk

if it's FITLER ROPE

NOWHERE else aboard ship is it more essential for rope to be absolutely dependable than that which must lower life boats. The possibility of overload might easily mean disaster—but Fitler rope has that excess strength for just such emergencies. It is a safeguard against rope failure, no matter for what purpose.

Its greater service life makes Fitler rope decidedly more economical. Tough, flexible, water repellant, its ability to resist wear and abrasion makes replacements much less frequent.

Look for the yellow and blue registered trade mark in all Fitler Rope. Stocks carried at the principal Atlantic, Pacific, Gulf and Great Lakes ports.

The EDWIN H. FITLER CO.

(Philadelphia Cordage Works)

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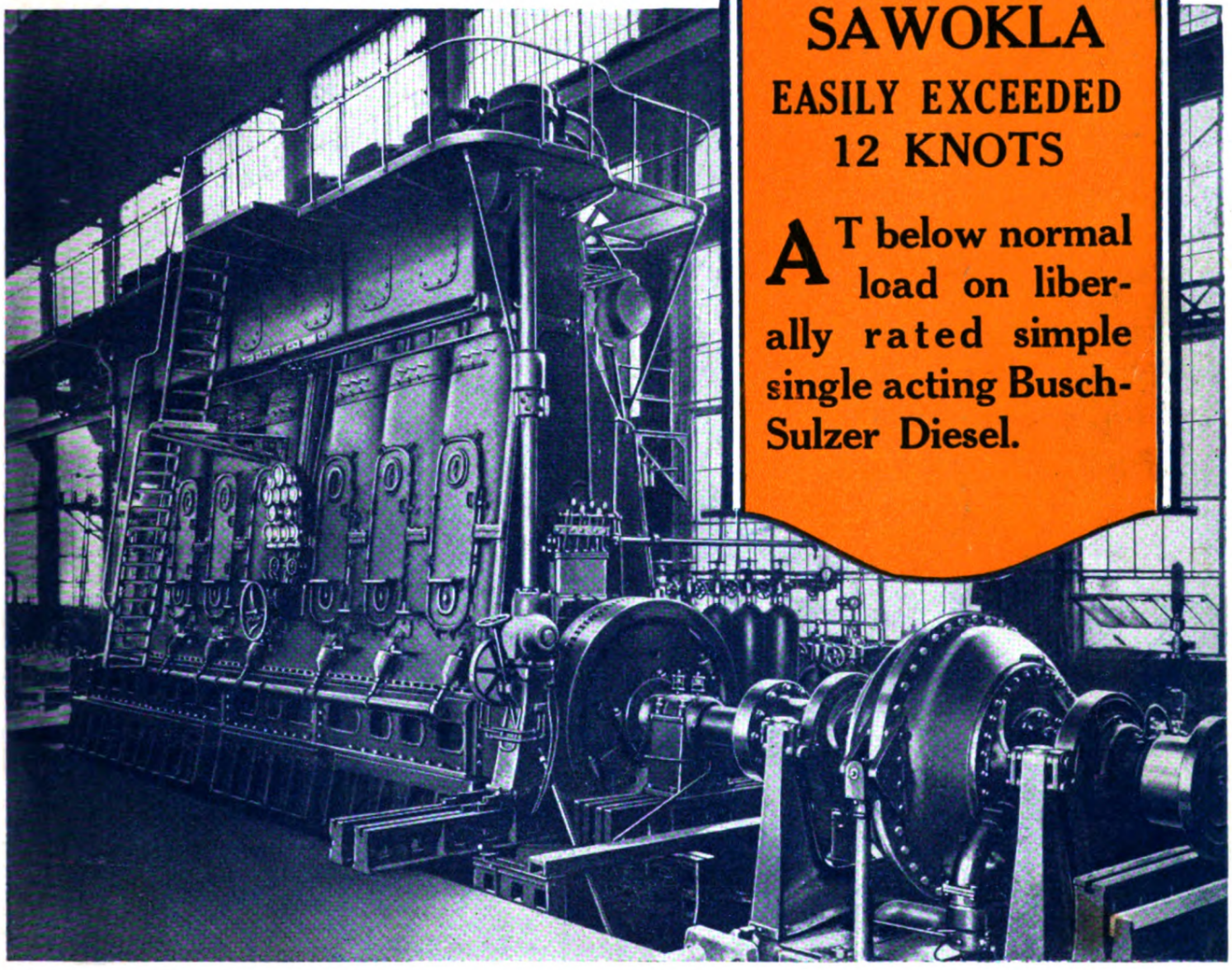
MAY, 1927

Marine Engineering

and Shipping Age

Engineering Library



SAWOKLA
EASILY EXCEEDED 12 KNOTS

AT below normal load on liberally rated simple single acting Busch-Sulzer Diesel.

BUSCH-SULZER

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Not a single defect in 20,000 oxwelded joints*

SO RELIABLE and standardized is the laying of oxwelded pipe lines for gas and oil, that a well-organized crew will run a hundred miles or more of pipe without a single defective joint.

In fact, trained operators working under procedure control have put lines into service without making any pressure or proof tests whatever and the results have been perfectly satisfactory.

More important evidence is that periodic inspections by line walkers have been discontinued. They were found to be unnecessary on welded lines. The inspectors never found anything to report.

This is remarkable when one remembers that the lines are laid in summer and that during the winter there is frequently a 90-degree temperature drop, producing temperature stresses as high as 25,000 pounds per square inch. And in addition to all this, oil lines operate under a liquid pressure of 650 to 750 pounds.

Linde Engineers will be glad to advise you on Linde procedure control for making welded pipe joints. Other Linde procedure controls cover a wide variety of applications of the oxy-acetylene process.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
General Offices: Carbide and Carbon Building
30 East 42d Street, New York
37 PLANTS . . . 107 WAREHOUSES

LINDE OXYGEN

★ No. 5 of a series of advertisements on the engineering phases of oxy-acetylene welding and cutting. Send for the booklet entitled: "Engineering and Management Phases of Oxwelded Construction."

Vol. XXXII **No. 5**
Published Monthly by Simmons-Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00; foreign countries, $4.00 a year, or, .17.0, through the London Office, single copy 35 cents or, 1.6d. Entered at New York, N. Y., as second-class matter.

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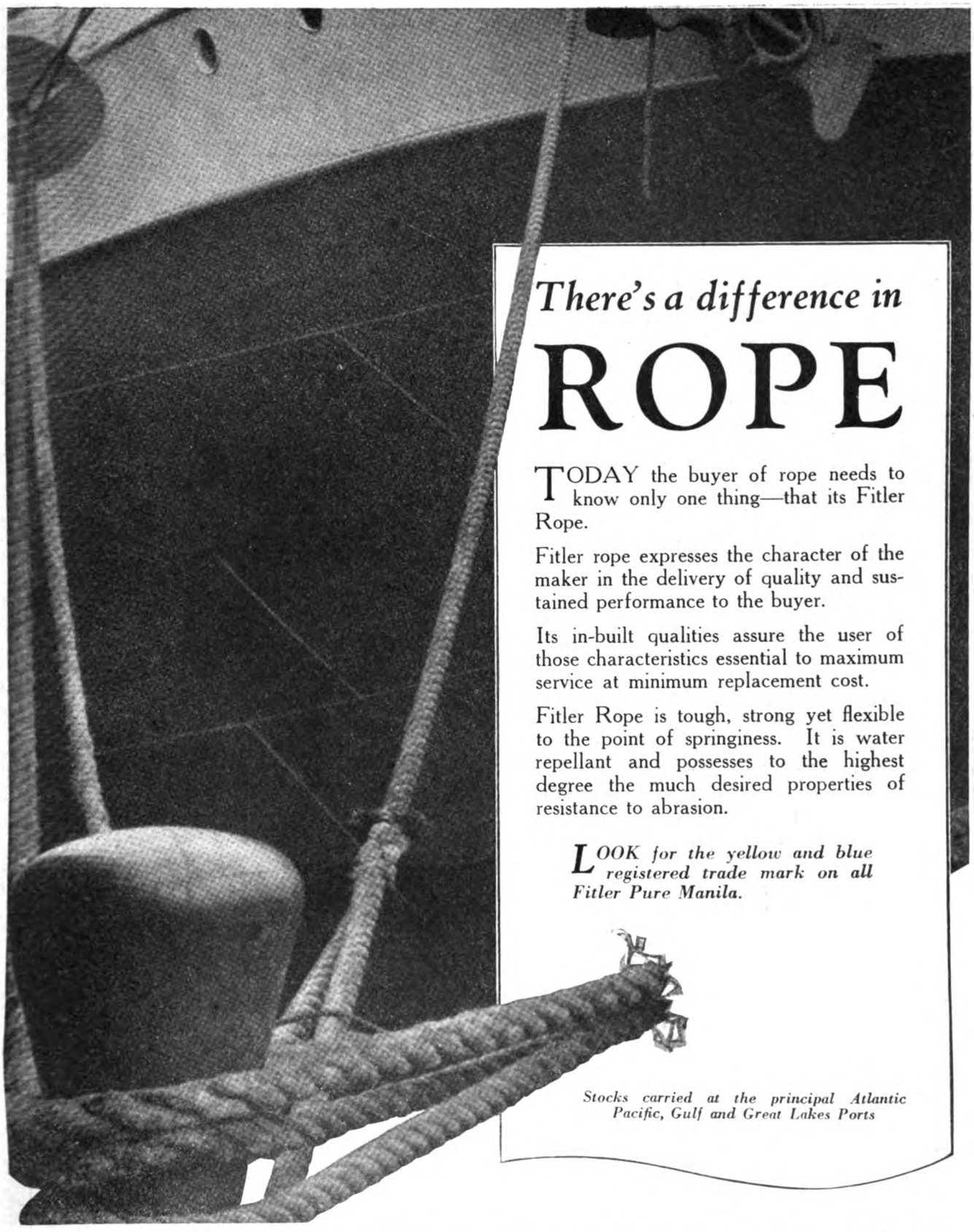

There's a difference in

ROPE

TODAY the buyer of rope needs to know only one thing—that its Fitler Rope.

Fitler rope expresses the character of the maker in the delivery of quality and sustained performance to the buyer.

Its in-built qualities assure the user of those characteristics essential to maximum service at minimum replacement cost.

Fitler Rope is tough, strong yet flexible to the point of springiness. It is water repellant and possesses to the highest degree the much desired properties of resistance to abrasion.

LOOK for the yellow and blue registered trade mark on all Fitler Pure Manila.

Stocks carried at the principal Atlantic Pacific, Gulf and Great Lakes Ports

The EDWIN H. FITLER CO.

(Philadelphia Cordage Works)

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JUNE, 1927

Marine Engineering and Shipping Age

Engineering Library
JUN 9 1927

Columbian, "The Guaranteed Rope"

There is no beating about the bush in the Columbian Guarantee. It's right there and anyone can plainly see it, printed on the red, white and blue *Tape-Marker,* and backed by the manufacturer's signature. Think what it means when all lines aboard contain the

Red, White and Blue *Tape-Marker*

It means that each line is fully Guaranteed and in proof of the genuineness of this Guarantee, the manufacturer adds his signature to it. As the *Tape-Marker* extends in one strand, throughout the entire length, the Columbian Guarantee goes with every line, whether it be a full coil or a few fathoms. It is the most tangible Guarantee in the cordage industry and a definite assurance of Rope Satisfaction.

Columbian Rope Company
Genesee Street
Auburn, "*The Cordage City*" N. Y.
Branches: New York Chicago Boston New Orleans

35 CENTS A COPY

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An Industrious Partner

With 22 years of experience to guarantee quality and with 31 plants and 101 warehouses to guarantee supply, Prest-O-Lite dissolved acetylene is an ideal partner in your business.

THE PREST-O-LITE COMPANY, INC.
Unit of Union Carbide and Carbon Corporation
General Offices: Carbide and Carbon Building
30 East 42d St., New York
31 Plants—101 Warehouses

Prest-O-Lite
DISSOLVED ACETYLENE

Vol. XXXII **No. 6**

Published Monthly by Simmons-Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00; foreign countries, $4.00 a year or, 17.0, through the London Office, single copy 35 cents or, 1.6d. Entered at New York, N. Y., as second-class matter.

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Security plus Wear

THERE is a sense of security about pure Manila rope that has become traditional among men of the sea the world over — the yellow and blue registered trade marks of Fitler guarantees pure Manila rope.

Fitler rope has repeatedly demonstrated its wear resisting properties, tough, strong, water repellent, it is extremely pliable.

When you want maximum rope service at minimum replacement cost specify Fitler rope— there's a marked difference.

Stocks carried at the principal Atlantic, Pacific and Great Lakes ports.

The EDWIN H. FITLER CO.

(Philadelphia Cordage Works)

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JULY, 1927

Marine Engineering and Shipping Age

Engineering

JUL 12 1927

At Home and Abroad

FORTY hulls built and under construction for varied types of service at home and abroad testify to the popularity of the Ellis Channel System. Ellis Hulls are strong and seaworthy. Their splendid record for low maintenance and construction costs will interest all progressive owners. Write for further information.

ELLIS CHANNEL SYSTEM
OF STEEL HULL CONSTRUCTION
PATENTED
EDGAR AMES, Sole Licensee 30 Church St., New York

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Your neighbor the petroleum refiner adopts the oxy-acetylene process★

IN 1913 about 11% of the crude oil was recovered as gasoline. Today the gasoline yield is about 37%. Back of this amazing development are a number of factors and one of the most essential of these is oxwelding.

Every engineer who has had a hand in this work will tell you that without oxwelding the present refinery equipment could not have been made.

Instead of the old shell type still, from which the oil was vaporized by direct firing into a condenser coil immersed in a tank of water, the present trend is toward continuous pipe stills and fractionating columns operated under pressure. Such equipment is vastly more complicated in design and could not be made (we speak advisedly) if it were not for oxy-acetylene welding and cutting.

The rapidity with which complicated manifolds, interchangers, fractionating towers and supporting structures can be fabricated with oxwelding has enabled the engineers to test out a variety of equipment design. The leakproof joints of oxwelded equipment make it possible to put a plant in operation quickly without interminably caulking joints. And when repairs or a change in design is desirable, the welding and cutting blowpipes are ready to do the job.

Imagine, for example, trying to operate a whole still piping and condenser system at a pressure just a few millimeters above absolute, without welded joints.

Every engineer in every industry must in self-defense become thoroughly familiar with the oxy-acetylene process. And Linde has at hand detailed information on hundreds of applications of the oxy-acetylene process. Our engineers stand ready to advise you about its use in your business.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
General Offices: Carbide and Carbon Building
30 East 42d Street, New York
37 PLANTS . . . . . 107 WAREHOUSES

LINDE OXYGEN

★ No. 7 of a series of advertisements on the engineering phases of oxy-acetylene welding and cutting. Send for the booklet entitled "Engineering and Management Phases of Oxwelded Construction."

Vol. XXXII No. 7
Published Monthly by Simmons Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00;

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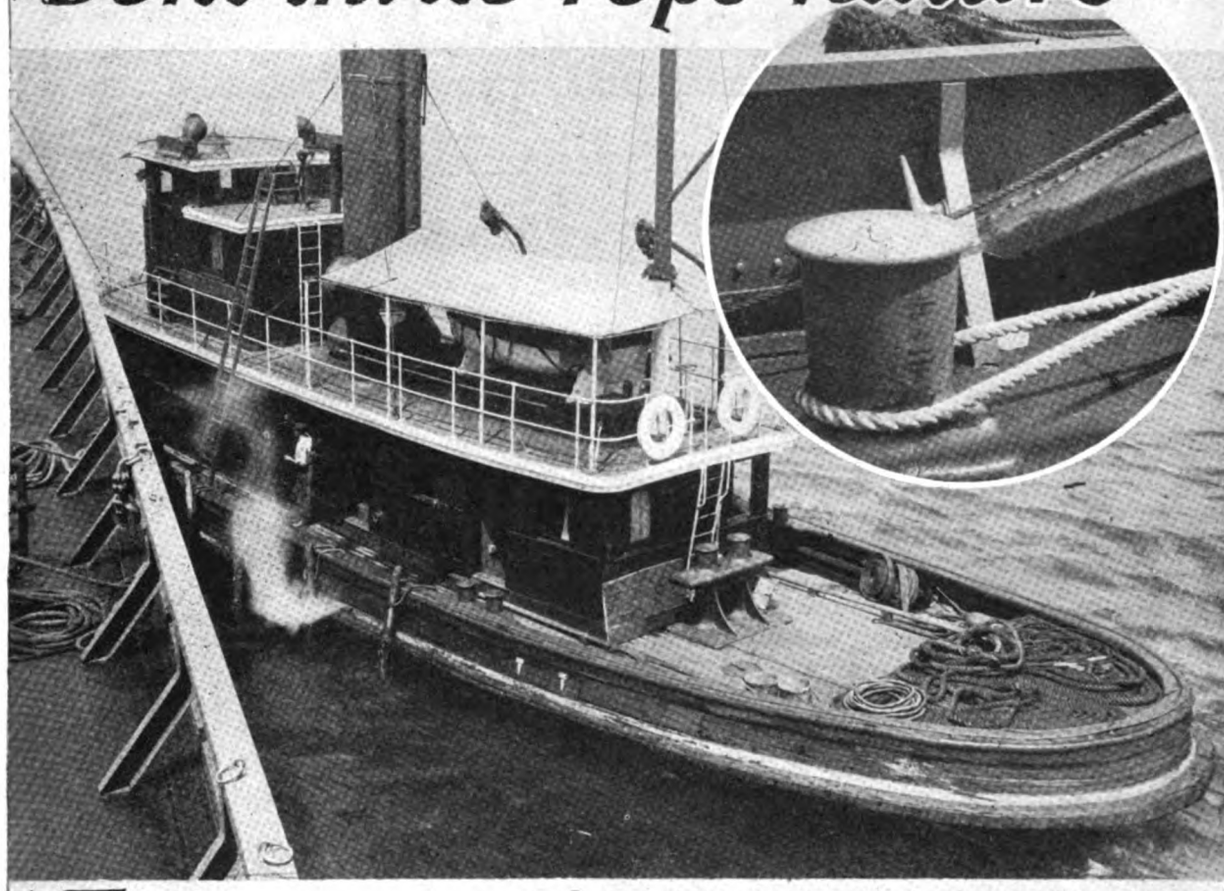
Don't invite rope failure–



Fitler rope is guaranteed!

ROPE failure is always costly—accidents, delays and damage of every description follow in its wake, but—there is a preventive, the protection of the yellow and blue registered trade mark in all Fitler Pure Manila Rope.

This is your positive guarantee of always securing the maximum service that rope can give under every condition of service, no matter how unusual.

Fitler rope, strong, tough, flexible and water repellant, is wear resisting to the highest degree; that is why it is far cheaper in the end to specify Fitler wherever rope is used. It is always easy to obtain.

Stocks carried at the principal Atlantic, Pacific, Gulf and Great Lakes ports.

The EDWIN H. FITLER CO.

(*Philadelphia Cordage Works*)

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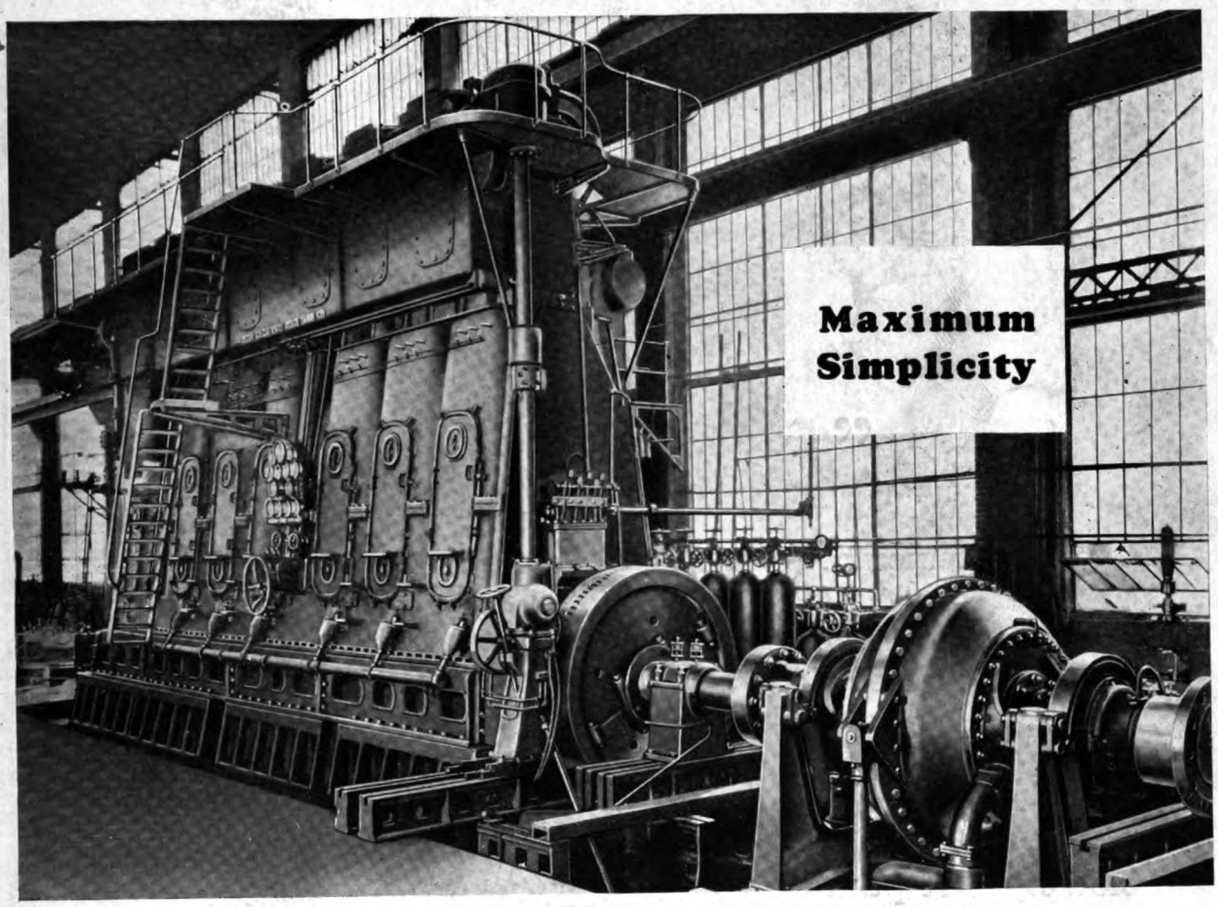
AUGUST, 1927
AUG 8 1927

Marine Engineering

and Shipping Age

Engineering Library



3000 B.H.P. BUSCH-SULZER DIESEL SUPPLIED U. S. SHIPPING BOARD

MAINTAINED THE LEADERSHIP
OF
AMERICA'S OLDEST DIESEL BUILDER
[THIRTY YEARS' EXPERIENCE 1897-1927]

30-Day Shop Test	Contract	Performance
Fuel per BHP Hr.	.43 Lbs.	.406 Lbs.
Mechanical Efficiency	72.0%	74.4-77.9%
M.I.P. lbs. per sq. in.	85.0	80.7
Weight (reduced)	1,000,000 lbs.	850,000 lbs.

BUSCH-SULZER

Busch-Sulzer Bros. Diesel Engine Co., St. Louis, Mo., U.S.A.

25 CENTS A COPY

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The "putting-on" tool

Do you remember the days of the sky-hook, the left-handed monkey wrench and the putting-on tool? They were grand old shop gags for green hands.

But there *is* a putting-on tool. It is the Oxweld welding blowpipe. It puts on metal where metal is needed. A shaft worn thin can be built up to the proper size. Shear tables and crusher jaws that are ready for the scrap pile can be put back to work by putting on a little metal. And undersized parts can be reclaimed by this modern method.

Nor is that the whole story, for, with welding rods of Haynes Stellite or special alloy steels, the new "put-on" surface can be made better and actually wears longer than the original.

Do you know where the putting-on tool can help you in your business? It pays to be up-to-date.

THE PREST-O-LITE COMPANY, INC.
Unit of Union Carbide and Carbon Corporation
UCC
General Offices: Carbide and Carbon Building
30 East 42d Street, New York
31 Plants—88 Warehouses

22 years old and still growing

Prest-O-Lite
DISSOLVED ACETYLENE

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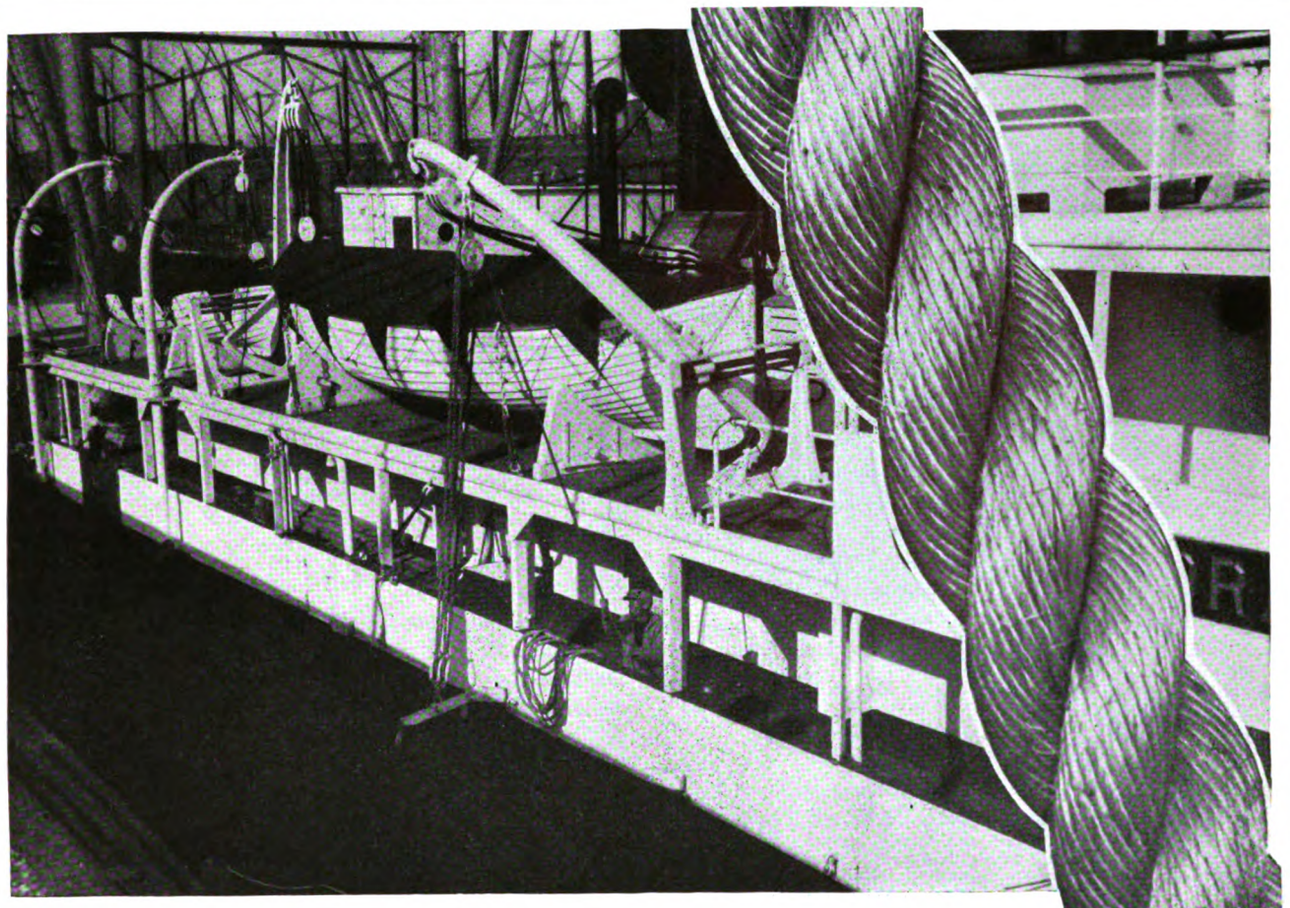

Greater Service—Less Risk
if it's FITLER ROPE

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Look for the yellow and blue registered trade mark in all Fitler Rope. Stocks carried at the principal Atlantic, Pacific, Gulf and Great Lakes ports.

The EDWIN H. FITLER CO.

(Philadelphia Cordage Works)

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SEPTEMBER, 1927

Marine Engineering and Shipping Age

Engineering Library

SEP 8 1927

Protecting the Futures of the 12 Shipping Board Conversions

LIKE all other ships of their type, the Shipping Board Conversions depend upon the receipts from cargo for their existence. However, as long as they remain in operation, their share is assured for they are safe from the ill-repute of fire. Efficient detection and extinction by the Lux-Rich System protects all twelve of them from fire and its resulting loss of cargo.

When fire breaks out in a cargo space on one of the conversions, the Lux-Rich System gives a warning in the wheelhouse promptly, within 2 minutes of the first trace of smoke. In addition, it definitely locates the fire permitting efficient extinction.

The Lux-Rich System accomplishes extinction by flooding the space afire with carbon dioxide—a harmless gas that will not support combustion. The gas smothers the flames, and because of its harmless character, limits all damage to that by fire only.

You too, can handle cargo fires efficiently on your ships by installing Lux-Rich Systems. With prompt detection and harmless extinction, all fires are made small fires and your ship is made safe from ill-repute.

Write, without obligation, for the booklet entitled "Incidents instead of Disasters." It describes the Lux-Rich System.

Walter Kidde & Company, Inc.
140 Cedar Street
New York

THE LUX-RICH SYSTEM

handles cargo fires efficiently

LUX — The RICH System

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Leak-proof tanks and pressure vessels—by oxwelding*

ALL riveted storage tanks and pressure vessels develop leaks ultimately. Every year thousands and thousands of dollars' worth of volatile liquids evaporate from storage vessels even though the riveted vessels may appear tight when tested. Oxwelded vessels on the other hand are actually and permanently leak-proof.

That is why oxwelded tanks and pressure vessels have become popular.

A test was made recently on a welded tank five feet in diameter and forty-three feet long, made of inch and one-eighth steel with double-vee oxwelded joints. The vessel was designed on the basis of a fibre stress of 8,000 lb. per sq. in., but when the test pressure was raised to 1,000 lb., the testers were applying a pressure equal to three times the working pressure (based on a design fibre stress of 9,000 lb. per sq. in.). Two tests at this pressure showed practically no distortion except around the manhole. It was then tested to destruction, and failed through the manhole. Examination proved that the welds were in no way affected.

It would be impossible to make such a high proof test on riveted pressure vessels because the riveted seams spring leaks long before the walls or the heads are severely stressed. But it is now possible to test even the head construction and design, since oxwelded joints and seams are as strong as the metal walls themselves.

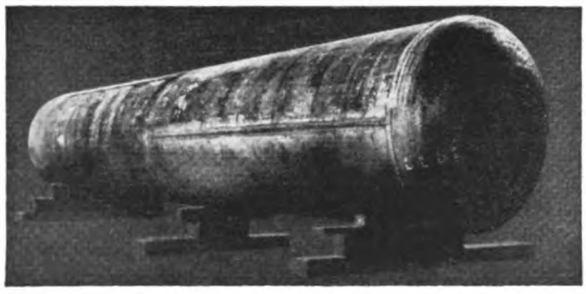
Linde Procedure Controls explain in detail the construction of pressure vessels with Oxweld No. 1 High Test rod.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation

UCC

General Offices: Carbide and Carbon Building
30 East 42d Street, New York

37 PLANTS . . . . . 105 WAREHOUSES



LINDE OXYGEN

★ No. 9 of a series of advertisements on the engineering phases of oxy-acetylene welding and cutting. Send for the booklet entitled: "Engineering and Management Phases of Oxwelded Construction."

Vol. XXXII **No. 9**
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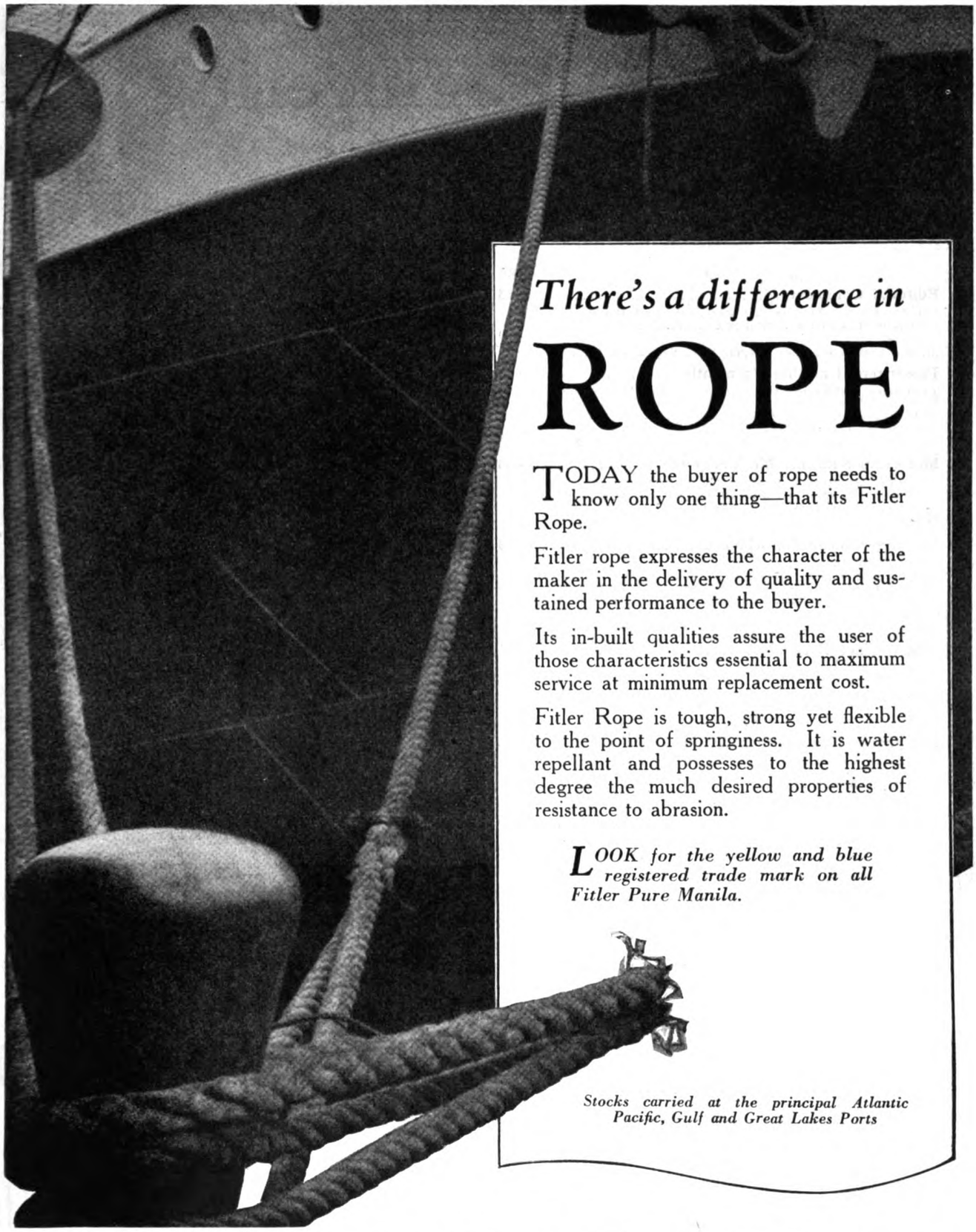

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(Philadelphia Cordage Works)

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OCTOBER, 1927

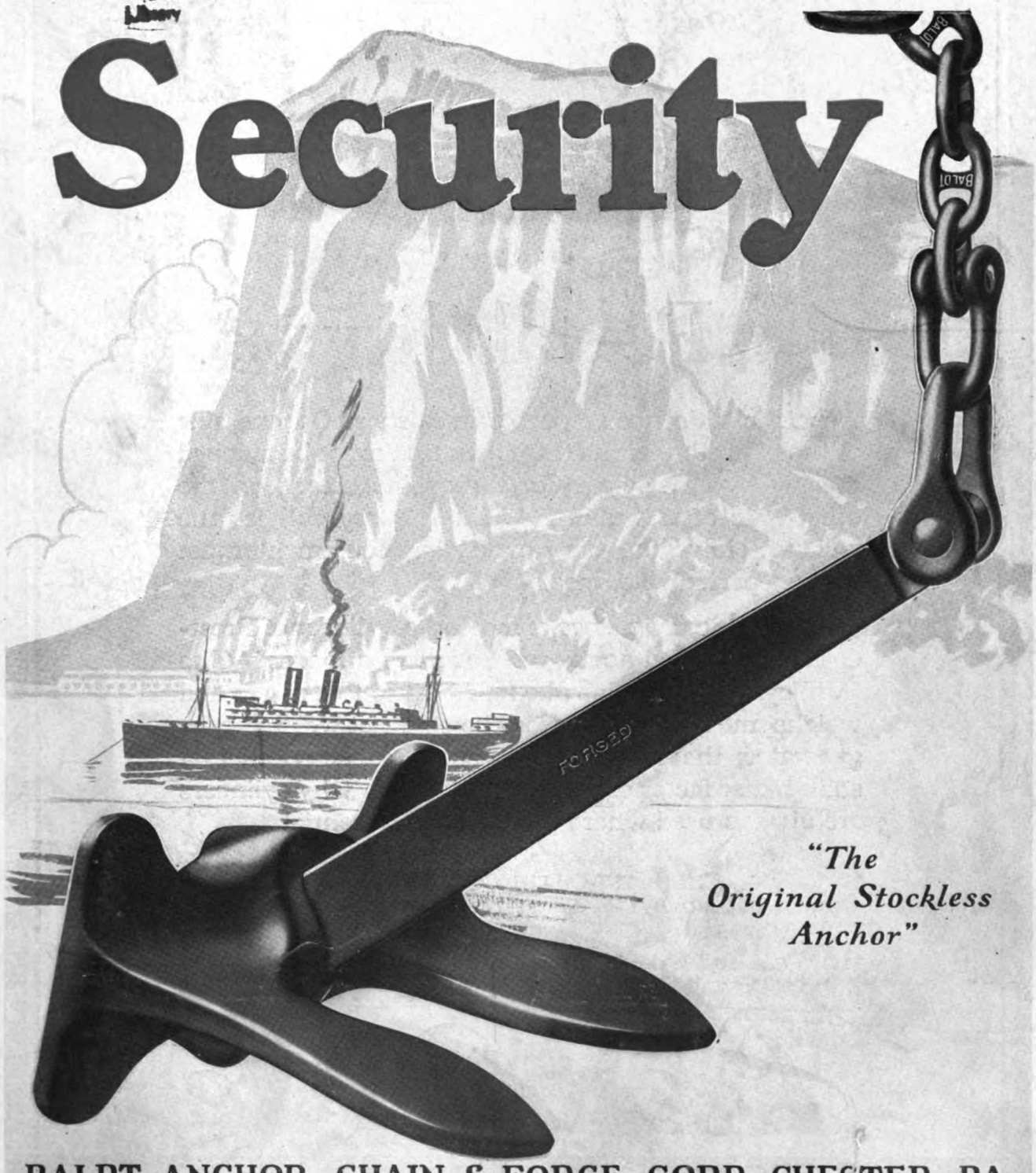
OCT 10 1927

Marine Engineering

and Shipping Age

Engineering Library

Security



"The Original Stockless Anchor"

BALDT ANCHOR, CHAIN & FORGE CORP. CHESTER, PA.

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Portability

Repair jobs do not respect convenience. On one side of the plant there is a steam leak that must be stopped quickly by oxwelding. Or, a machine breaks on the other side of the plant. Again a hurry call for the welder. Time after time oxwelding equipment must be transported with speed.

Then the convenience of moving a cylinder of Prest-O-Lite dissolved acetylene becomes apparent. The WK cylinder contains about 270 cubic feet of gas and weighs much less than even the smallest welding type generator; the WC size (100 cu. ft. capacity) offers a still greater factor of portability. That is why cylinders are always used where portability is essential.

THE PREST-O-LITE COMPANY, INC.
Unit of Union Carbide and Carbon Corporation
UCC
General Offices: Carbide and Carbon Bldg., 30 East 42d St., New York
31 Plants — 101 Warehouses

Prest-O-Lite
DISSOLVED ACETYLENE

Vol. XXXII No. 10
Published Monthly by Simmons-Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00; foreign countries, $4.00 a year, or 17/0 through the London Office, single copy 35 cents or, 1.6d. Entered at New York, N. Y., as second-class matter.

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Security plus Wear

THERE is a sense of security about pure Manila rope that has become traditional among men of the sea the world over — the yellow and blue registered trade marks of Fitler guarantees pure Manila rope.

Fitler rope has repeatedly demonstrated its wear resisting properties, tough, strong, water repellent, it is extremely pliable.

When you want maximum rope service at minimum replacement cost specify Fitler rope— there's a marked difference.

Stocks carried at the principal Atlantic, Pacific and Great Lakes ports.

The EDWIN H. FITLER CO.

(Philadelphia Cordage Works)

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NOVEMBER, 1927

Marine Engineering and Shipping Age

NOV 14 1927
Engineering Library

The new "Dixie" has a Watchman for her Reputation

DAY and night, in fair weather and foul, the Lux-Rich System guards the "Dixie." It is always on the spot—in each of her holds and cargo spaces—and always on the lookout for fire. Moreover, it is an efficient watchman that will put fire out before it steals the goodwill of her shippers and mars her reputation.

The Lux-Rich System warns of fire within two minutes of the first trace of smoke and definitely locates it. It smothers fire while it is still insignificant, with no damage except for that by the fire itself. Certainly it is not too much to say that such a watchman is efficient.

In addition to the "Dixie," the Lux-Rich System guards such ships as the twelve Shipping Board Conversions, the "Saturnia" and "Vulcania," the "Santa Maria" and "Santa Barbara" and the "Bermuda." This efficient system safeguards their reputations from fire, and protects the goodwill of their passengers and shippers. It can do the same for your ships, too.

Upon request a booklet describing the Lux-Rich System will be mailed to you without obligation.

Walter Kidde & Company, Inc.
140 Cedar Street
New York

THE LUX-RICH SYSTEM

handles cargo fires efficiently

LUX — The RICH System

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Oxwelding has introduced sheet metal to the engineer★

ENGINEERS well remember the day when sheet metal equipment was put together with riveted or locked-seam joints. They were either unsightly or flimsy.

Now it is a different story. With high test steel welding rods it is possible to make sheet metal joints that are stronger than the metal itself. This rigid, durable flush type of joint has found wide acceptance in many industries, not only because of its strength but because of its ability to take and hold a finish of baked enamel.

Modern iceless refrigerators, where permanently tight joints are essential, are possible because of the oxwelded joint. The construction of ventilating ducts has been greatly simplified by the flexibility of the oxwelding process. And their effectiveness is increased tremendously because oxwelded joints do not leak.

In the building of automobile bodies and aircraft fuselages, where strength and dependability are vital, are two modern applications of oxy-acetylene welding to sheet metal construction. The strength and finish of the oxwelded joint are more largely responsible than any single thing for the wider use of sheet metal in engineering construction.

Linde engineers have much valuable information on the use of the oxy-acetylene process in sheet metal construction. This information is available upon request.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation

UCC

General Offices: Carbide and Carbon Building
30 East 42d Street, New York
37 PLANTS . . . . . 105 WAREHOUSES

LINDE OXYGEN

★ No. 11 of a series of advertisements on the engineering phases of oxy-acetylene welding and cutting. Send for the booklet entitled: "Engineering and Management Phases of Oxwelded Construction."

Vol. XXXII No. 11
Published Monthly by Simmons-Boardman Publishing Co., 30 Church St., New York, N. Y. Subscription price, United States, Mexico and Canada, $3.00; foreign countries, $4.00 a year, single copy 35 cents. Entered at New York, N. Y., as second-class matter.

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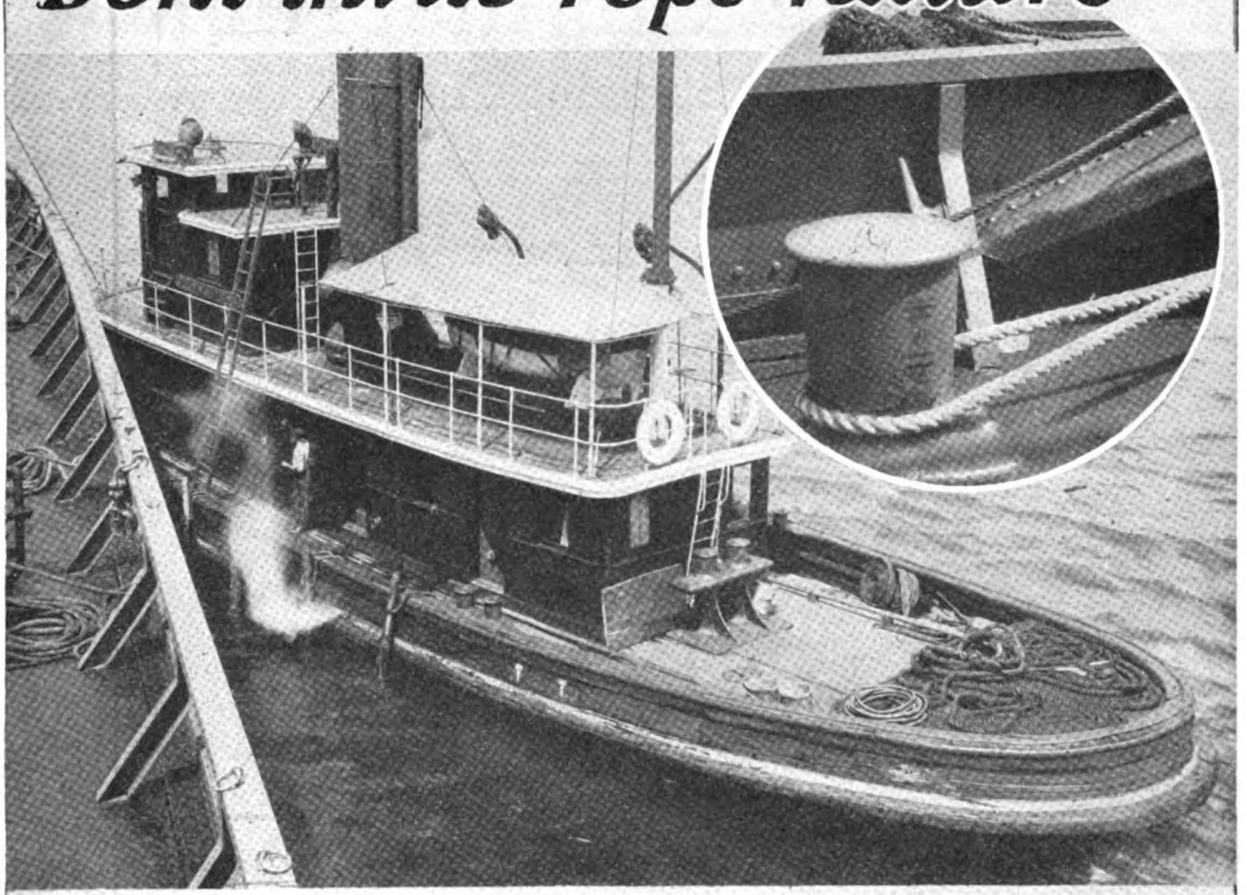
Don't invite rope failure—



Fitler rope is guaranteed!

ROPE failure is always costly—accidents, delays and damage of every description follow in its wake, but—there is a preventive, the protection of the yellow and blue registered trade mark in all Fitler Pure Manila Rope.

This is your positive guarantee of always securing the maximum service that rope can give under every condition of service, no matter how unusual.

Fitler rope, strong, tough, flexible and water repellant, is wear resisting to the highest degree; that is why it is far cheaper in the end to specify Fitler wherever rope is used. It is always easy to obtain.

Stocks carried at the principal Atlantic, Pacific, Gulf and Great Lakes ports.

The EDWIN H. FITLER CO.

(*Philadelphia Cordage Works*)

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DECEMBER, 1927

Marine Engineering and Shipping Age

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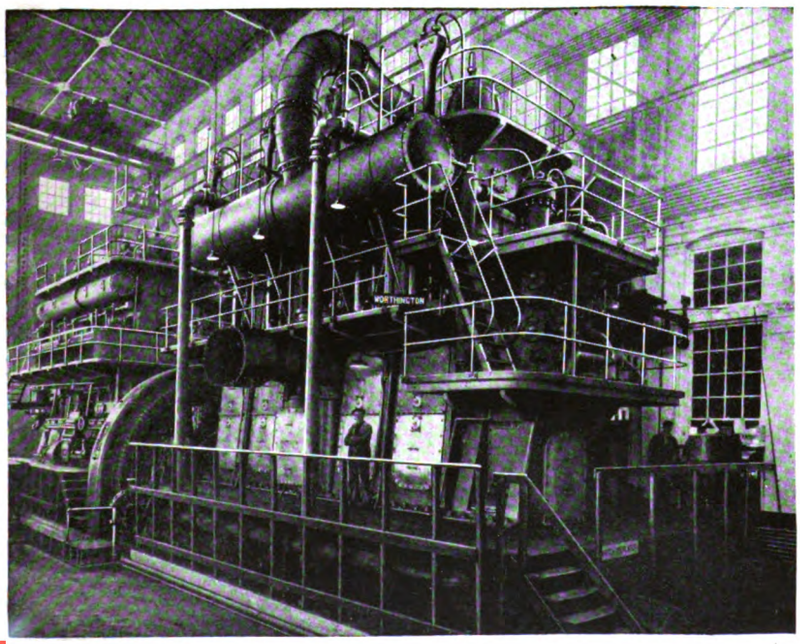
WORTHINGTON

TWO CYCLE, DOUBLE-ACTING

DIESEL ENGINES

600 s.h.p. to 12,000 s.h.p.

WORTHINGTON PUMP AND MACHINERY CORPORATION, NEW YORK



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WORTHINGTON PRODUCTS

PUMPS

COMPRESSORS

CONDENSERS and Auxiliaries

OIL and GAS ENGINES

FEEDWATER HEATERS

WATER and OIL METERS

Literature on request

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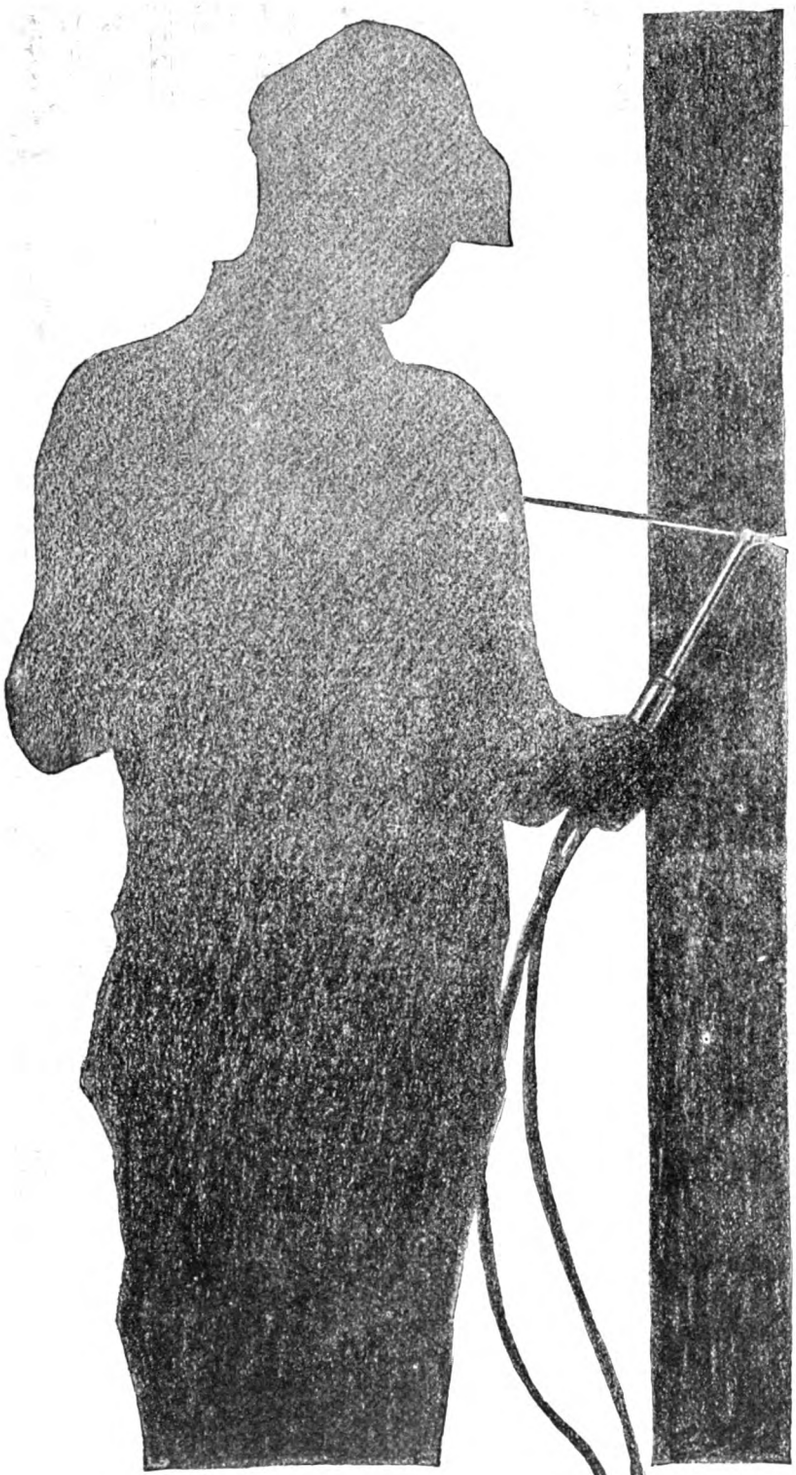

22 years old *but still* Growing

Large volume usually indicates a good product. Certainly this is true of Prest-O-Lite dissolved acetylene which has been used in greater volume year after year for 22 years. Today you can obtain Prest-O-Lite for oxy-acetylene welding and cutting from 119 plants and warehouses.

The PREST-O-LITE COMPANY, Inc.
Unit of Union Carbide and Carbon Company
General Offices: Carbide and Carbon Building
30 East 42d St., New York
31 Plants—101 Warehouses

Prest-O-Lite
DISSOLVED ACETYLENE

Vol. XXXII **No. 12**
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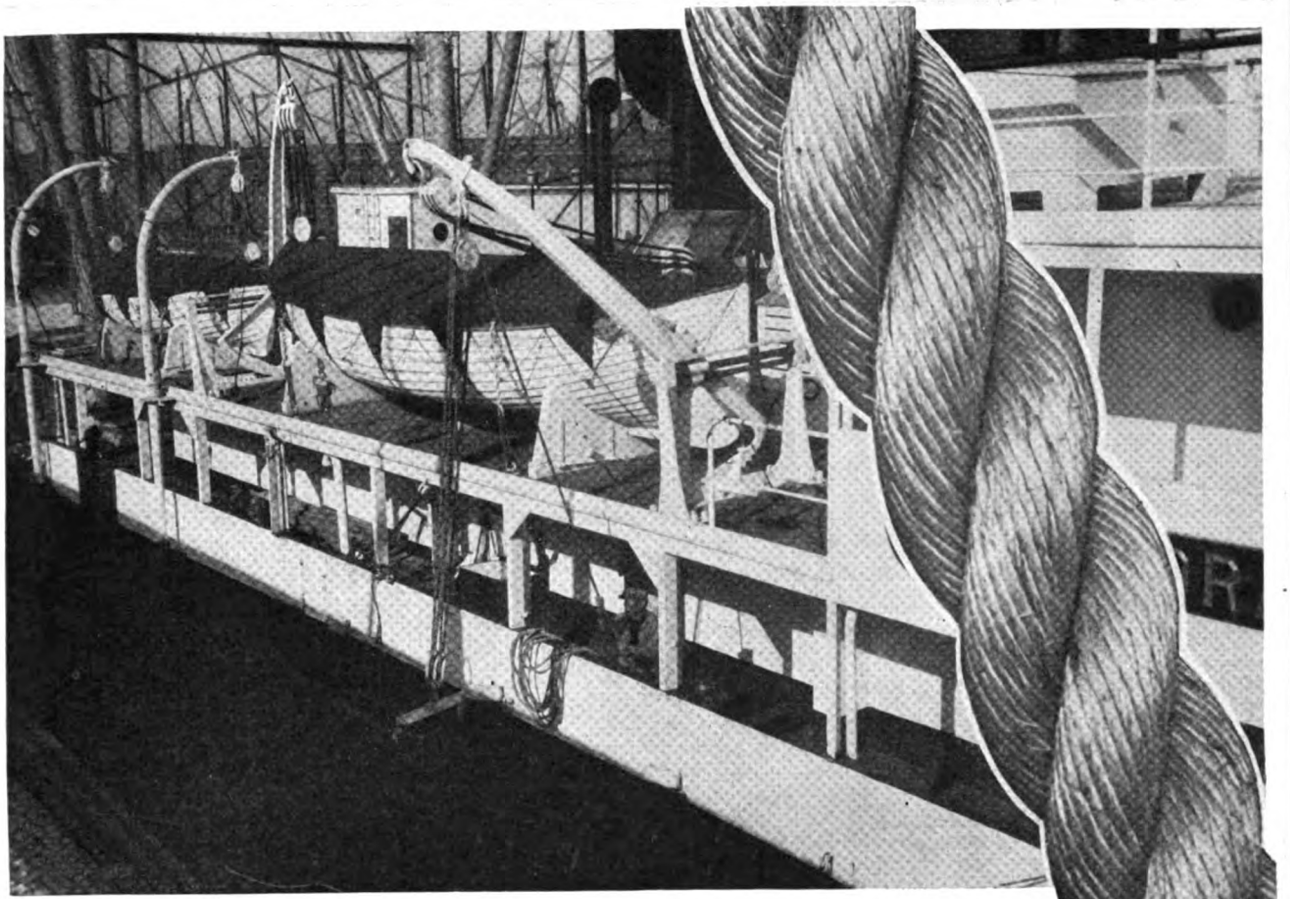

Greater Service—Less Risk
if it's FITLER ROPE

NOWHERE else aboard ship is it more essential for rope to be absolutely dependable than that which must lower life boats. The possibility of overload might easily mean disaster—but Fitler rope has that excess strength for just such emergencies. It is a safeguard against rope failure, no matter for what purpose.

Its greater service life makes Fitler rope decidedly more economical. Tough, flexible, water repellant, its ability to resist wear and **abrasion makes replacements much less frequent.**

Look for the yellow and blue registered trade mark in all Fitler Rope. Stocks carried at the principal Atlantic, Pacific, Gulf and Great Lakes ports.

The EDWIN H. FITLER CO.

(Philadelphia Cordage Works)

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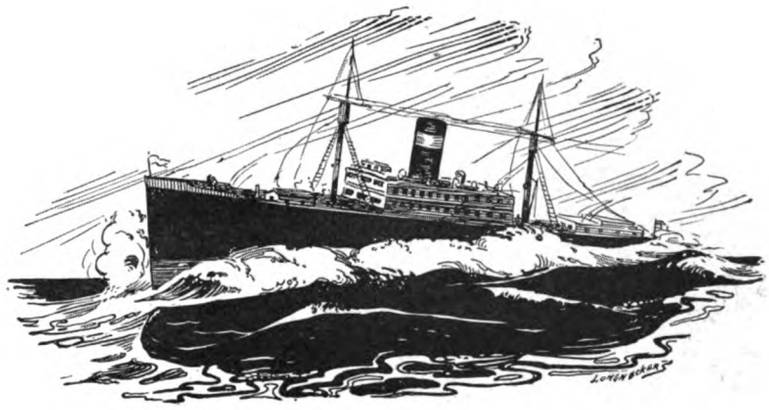
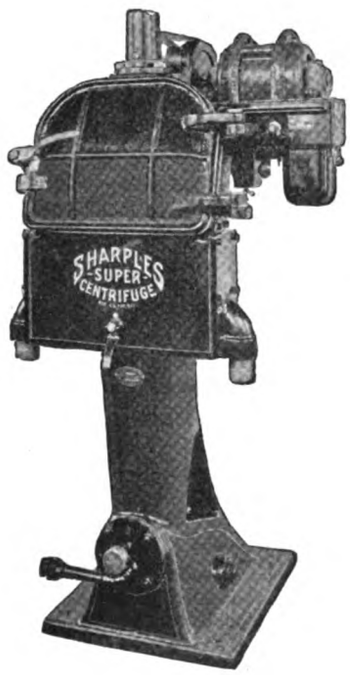


There are no "service stations" on the high seas



Engine trouble at sea is a serious menace. You can't call in "Service Stations" for a new supply of lubricating oil, or a new supply of clean fuel oil. Unless you have a Sharples, you can only trust to luck until you reach the nearest port.

Sharples Oil Purifiers now serve as absolute "Clean Oil Protection" to the world's finest ships. Before the impurities can accumulate in the oil lines, the Sharples "spins" them out.

With Sharples purified lubricating oil, you avoid the possibility of burned-out bearings—of engine failure and shut down.

With the Sharples purified fuel oil, your Diesel Engines are protected against injection valve trouble, liner wear and all misfiring due to water pockets in the fuel.

Get the facts and figures on this efficient system of oil handling and see what it means to your operating safety.

SHARPLES SPECIALTY COMPANY, 2316 WESTMORELAND STREET, PHILADELPHIA. Boston, New York, Pittsburgh, Chicago, Detroit, Tulsa, New Orleans, San Francisco, Los Angeles, Seattle, Toronto. Super-Centrifugal Engineers, Ltd., Aldwych House, London, W. C. 2, England; Ste. Ame., Des Appareils Centrifuges, Rueil (Seine-et-Oise) 70, Rue Du Vieux—Pont, Paris, France; Tatsumi Commercial Corporation, Marine Insurance Building, Tokio, Japan

SHARPLES
A GREAT FORCE

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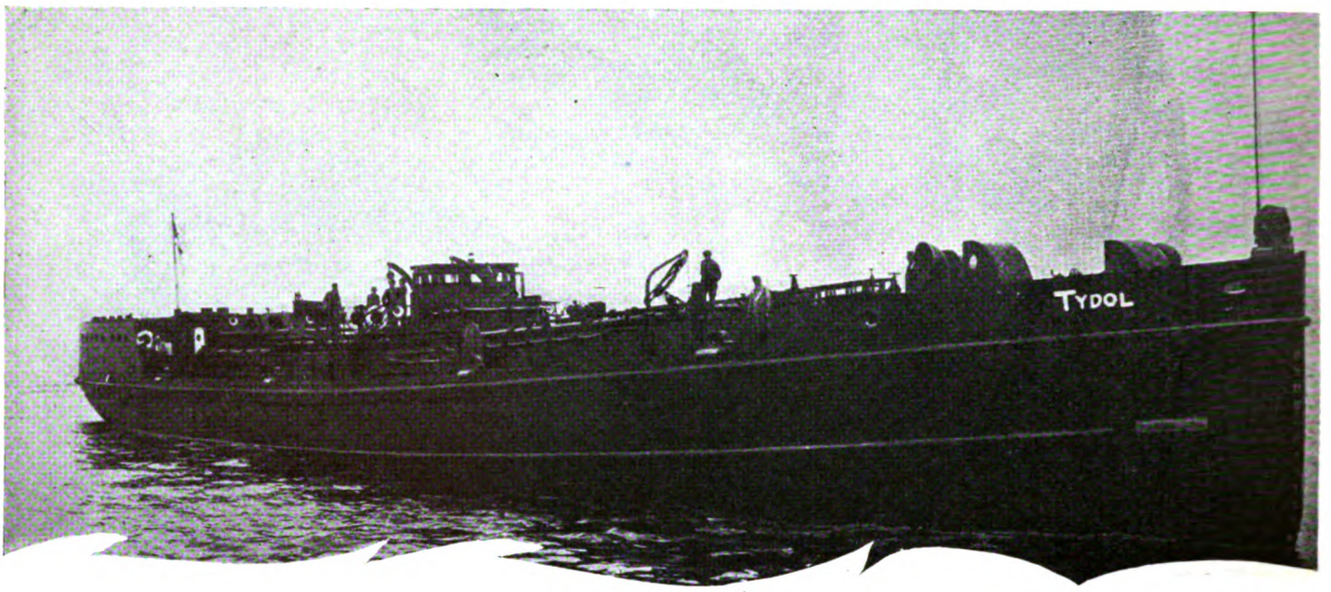
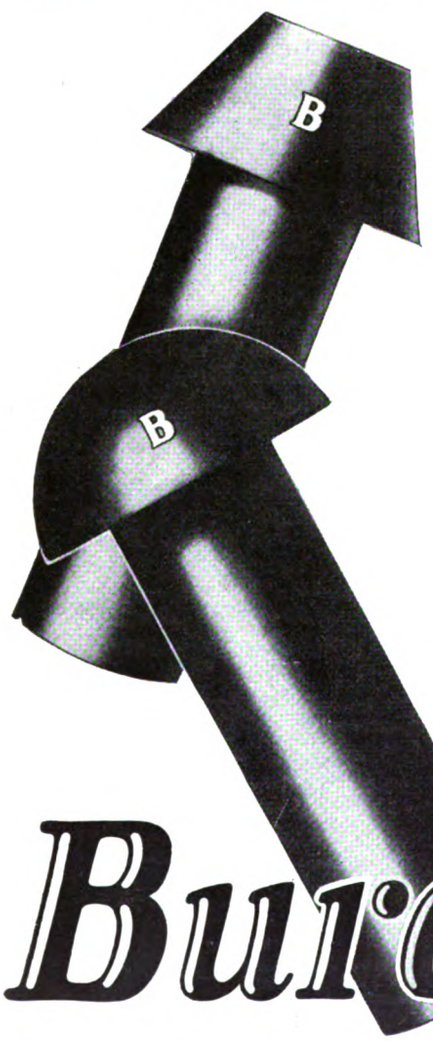


Courtesy of Tide Water Oil Co.

In Canal and Coast Service



Where Ordinary Rivets are Quickly Eaten Away

ABOVE illustration shows the *Tydol*, one of the most interesting of the motor driven tankers.

This vessel is owned by the Tide Water Oil Company, New York, and was especially designed by their engineers for canal and coast service.

Every rivet below the water line is made of *corrosion resisting* BURDEN IRON.

The rapid deterioration of under water riveting, especially on oil tankers in coast service, led to a scientific research which proved that *genuine puddled iron rivets* offer greatest resistance to the ravages of chemical corrosion and electrolysis.

By specifying BURDEN IRON RIVETS for the *Tydol* the Tide Water Oil Company has insured themselves against many expensive dry dockings for the renewal of under water riveting.

The Burden Iron Company
Troy New York

Burden **IRON RIVETS**

"The Sea Proves Them Best"

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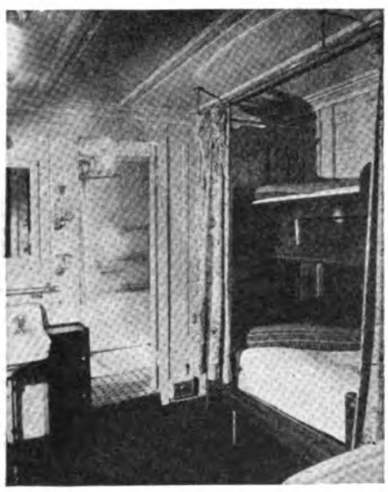
Cabin on the S.S. Harry Coulby with panels and mouldings of HASKELITE finished in tinted enamels.

First class stateroom on S.S. America of the United States Lines. HASKELITE used throughout for bulkheads and paneling.

HASKELITE *panels—*

a luxury for the passenger an economy for the owner



COMFORT and beauty are just as necessary to attract passenger revenue as fast, dependable schedules. The beautiful natural-wood finish of HASKELITE has an important effect on increasing revenue.

But this blood-glue plywood's other advantages—saving in space; savings in time and labor for fabrication and installation; its weather-proofness; strength to resist blows and add to life—produce economies that strongly recommend its use even if beauty were not a factor.

Bulkheads, panels, doors, etc., of HASKELITE and PLYMETL, its steel-faced companion, are delivering these economies on ships of such lines as the United States Shipping Board, Clyde, Merchants and Miners, and Goodrich.

The blue print booklet of marine applications shows how easily available these advantages are. Let us send it.

PLYWOOD HASKELITE PLYMETL

Haskelite Manufacturing Corporation
133 West Washington Street Chicago, Illinois

ME&SA12-Gray

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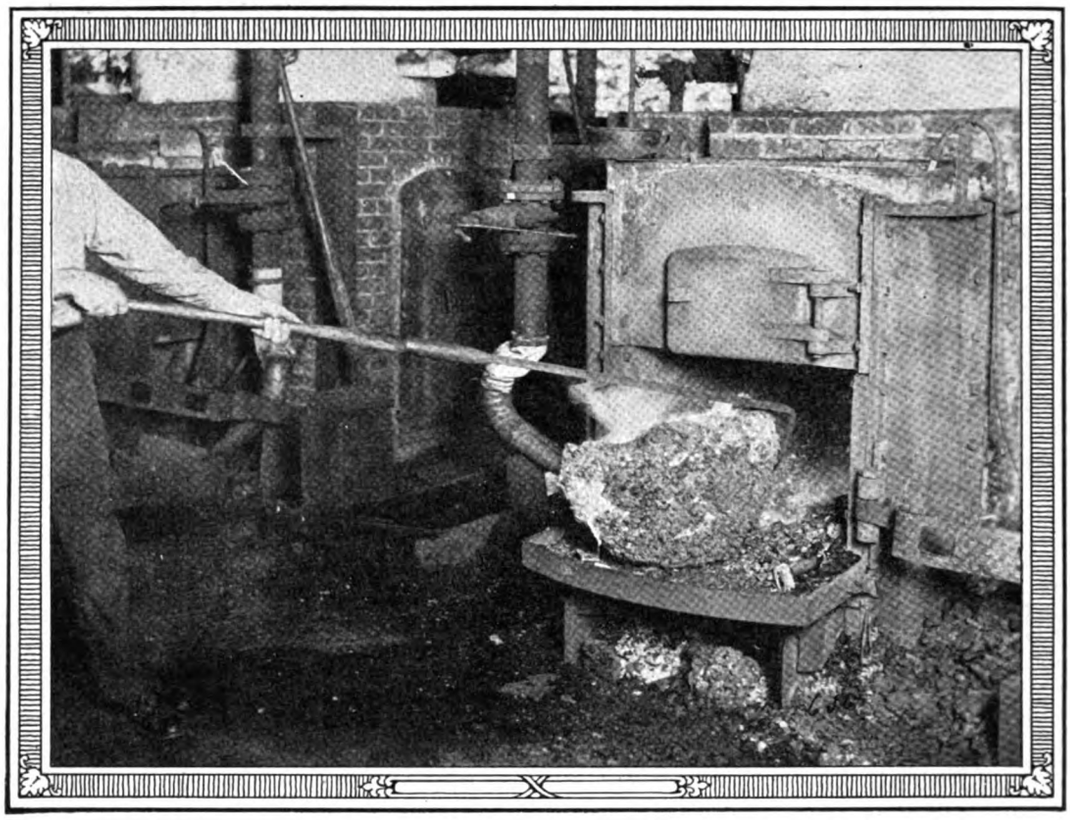

THE FIRST AND MOST IMPORTANT STEP IN THE MAKING OF READING CHARCOAL IRON BOILER TUBES

QUALITY in Charcoal Iron Boiler Tubes begins with the efficient operation of the forge or knobbling furnace. Here the base metal is subjected to the action of burning charcoal and cold-air blast, which slowly melts it, eliminating impurities and leaving a lump of commercially pure charcoal iron.

Every pound of base metal which enters the knobbling furnaces in Reading's million-dollar Tube Mill must meet the most rigid requirements. And the men who operate the furnaces are selected for their long experience and unerring accuracy in this exacting work.

Reading Charcoal Iron Boiler Tubes represent the best that the finest men, machinery and materials can produce.

READING IRON COMPANY

READING, PA.

Also Makers of Genuine Wrought Iron Pipe

Baltimore	Minneapolis	Los Angeles	Cleveland
Boston	Cincinnati	New York	St. Louis
Buffalo	Detroit	Philadelphia	Shreveport
Chicago	Houston	Pittsburgh	Tulsa
	Seattle		

READING

CHARCOAL IRON BOILER TUBES

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ANNOUNCEMENT

by

AMERICAN-LAFRANCE FIRE ENGINE COMPANY, INC.

and

Foamite-Childs Corporation

EFFECTIVE November 15, 1927, the American-LaFrance Fire Engine Company, Inc., of Elmira, N. Y., have acquired the assets and good will of the Foamite-Childs Corporation of Utica, N. Y., and the business of the two companies will be combined under a single corporate identity. The name of the company will be the American-LaFrance & Foamite Corporation.

For 82 years American-La France has been recognized as the leader in the development and production of modern fire-fighting equipment. More than 90% of the fire departments of this country are using American-LaFrance motor apparatus, extinguishers, and accessories. Also in industry, American-LaFrance represents the standard in scientific, dependable fire apparatus.

With long, successful experience in the manufacture of motor fire trucks, the American-LaFrance Company has also produced a complete line of heavy-duty commercial motor trucks which have gained recognition in every industry.

Foamite-Childs Corporation has been successful in the manufacture and distribution of certain types of fire protection equipment. They have developed the modern foam method of fire control (Foamite Protection) now widely used for safeguarding industrial, municipal, marine and private property.

THE combining of these two successful organizations brings under centralized direction and operation a body of engineering experts whose specialized experience makes possible a breadth and completeness of service never before approached.

The combination, AMERICAN-LAFRANCE & FOAMITE CORPORATION, will maintain sales offices and engineering representatives in all the principal cities of the United States and Canada. Affiliated companies will operate in foreign countries.

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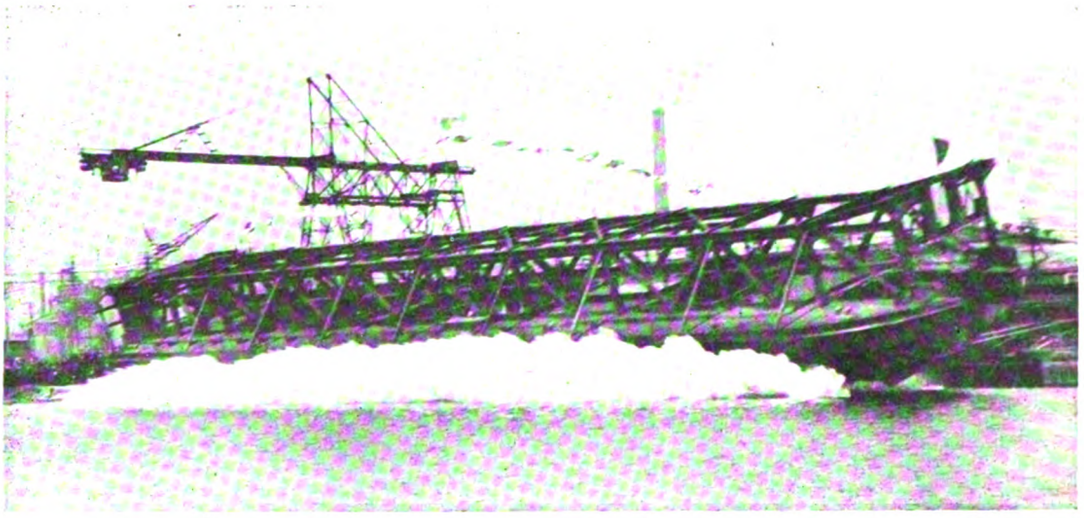

Launching of 30" pipe line Dredge "New Jersey" highest powered Diesel dredge in the world.

Owners: Great Lakes Dredge & Dock Co., Chicago

This dredge is now in regular operation
on the Chicago lake front.

BUSCH-

Busch-Sulzer Bros.-

St. Louis,

Eastern Sales Office:
Two Rector St.,
New York

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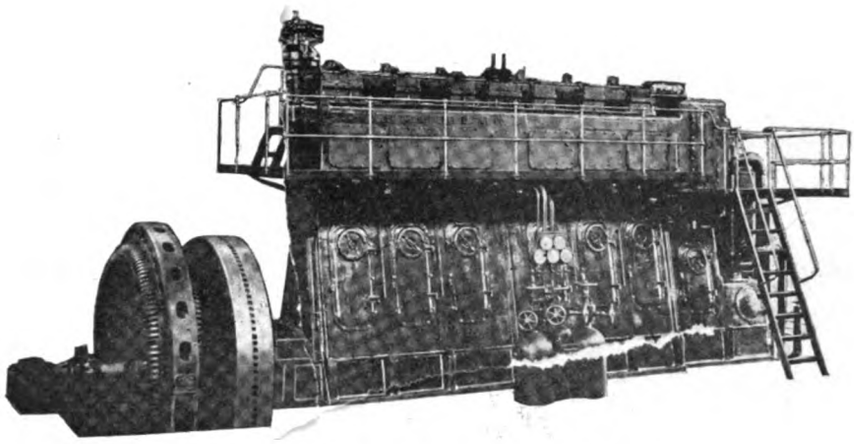

Busch-Sulzer standard type 6-CE-17 Diesel Engine.

Four of these engines (totalling 4600 BHP) drive generators for electric operation of all machinery.

SULZER

esel Engine Co.,

souri

Western Sales Office:
Rialto Bldg.,
San Francisco

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Diesel-electric drive excels

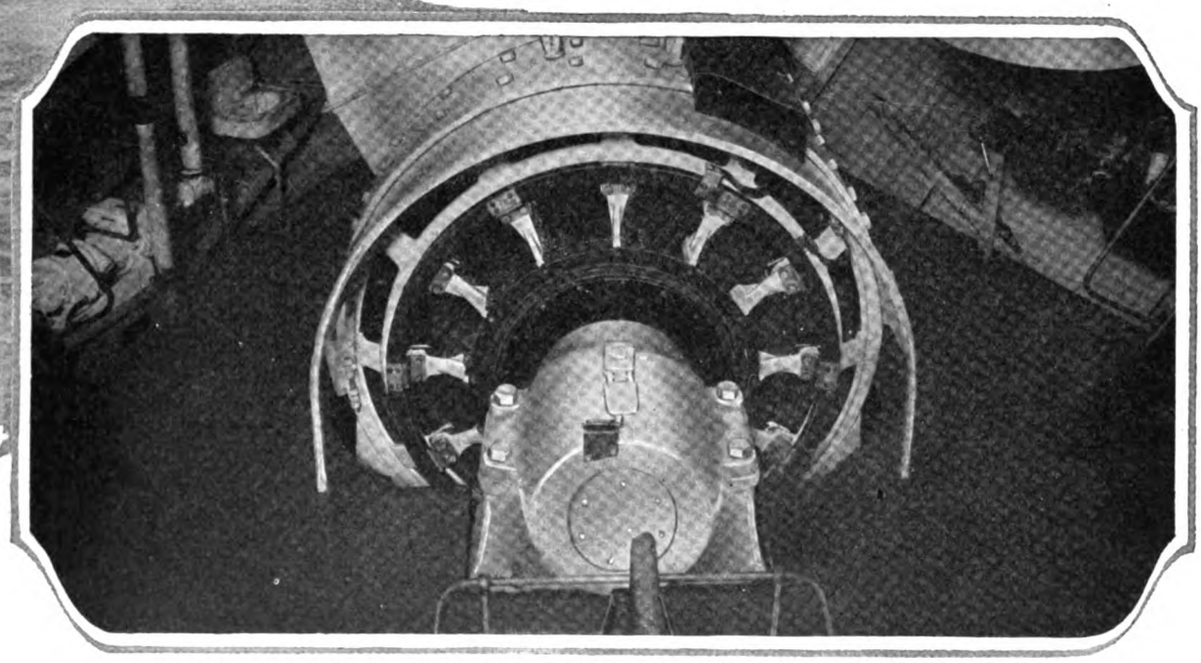
The Atlantic Refining Company's Tankers *Point Breeze, Sharon,* and *Bessemer*

The experience of the Atlantic Refining Company with Diesel-electric drive made inevitable its selection of this superior form of ship propulsion for the new tankers, ***Point Breeze, Sharon,*** and ***Bessemer.*** As a matter of course, it also chose General Electric equipment.

Owners and operators of Diesel-electric vessels invariably select this type of drive for new ships, for they are convinced of its superiority. An outstanding advantage of this form of propulsion is its maneuvering ability.

The compactness of the Diesel engines and the generators permits a reduction in the amount of space, and especially in the headroom, ordinarily required for the propulsion equipment. As the motor can be located at the stern of the ship, a long propeller shaft and shaft tunnel, with all the attendant disadvantages, are unnecessary.

These and other advantages explain why G-E Diesel-electric equipment has been termed "the modern marine drive."



Propulsion motor of the Diesel-electric tanker, M.S. Point Breeze. This motor is rated 1800 h.p. at 90 r.p.m.

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ELECTRIC

SALES OFFICES IN PRINCIPAL CITIES

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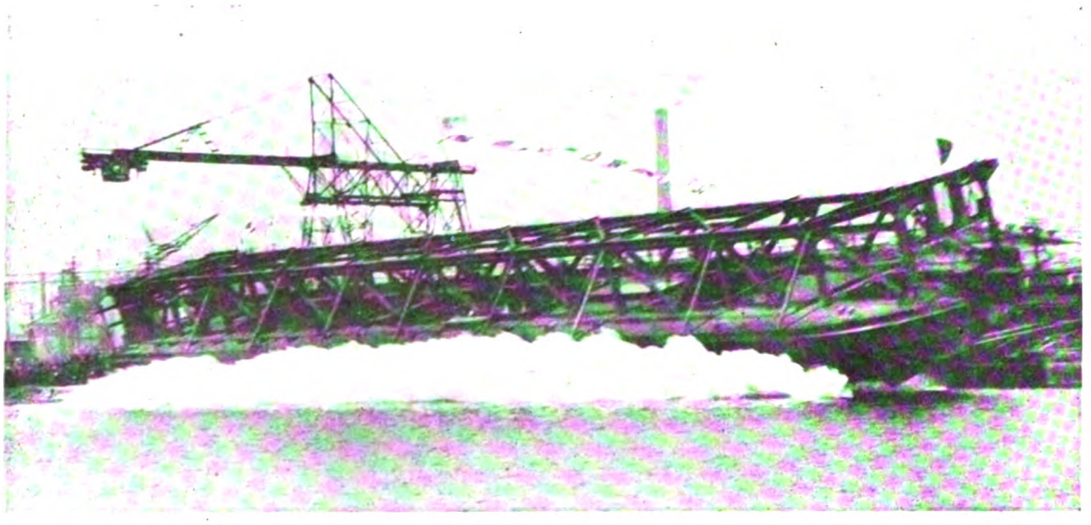

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Owners: Great Lakes Dredge & Dock Co., Chicago

This dredge is now in regular operation
on the Chicago lake front.

BUSCH-

Busch-Sulzer Bros.-

St. Louis,

Eastern Sales Office:
Two Rector St.,
New York

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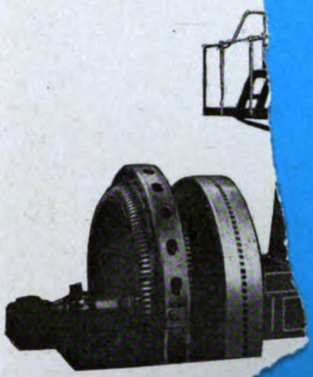

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Diesel-electric drive excels

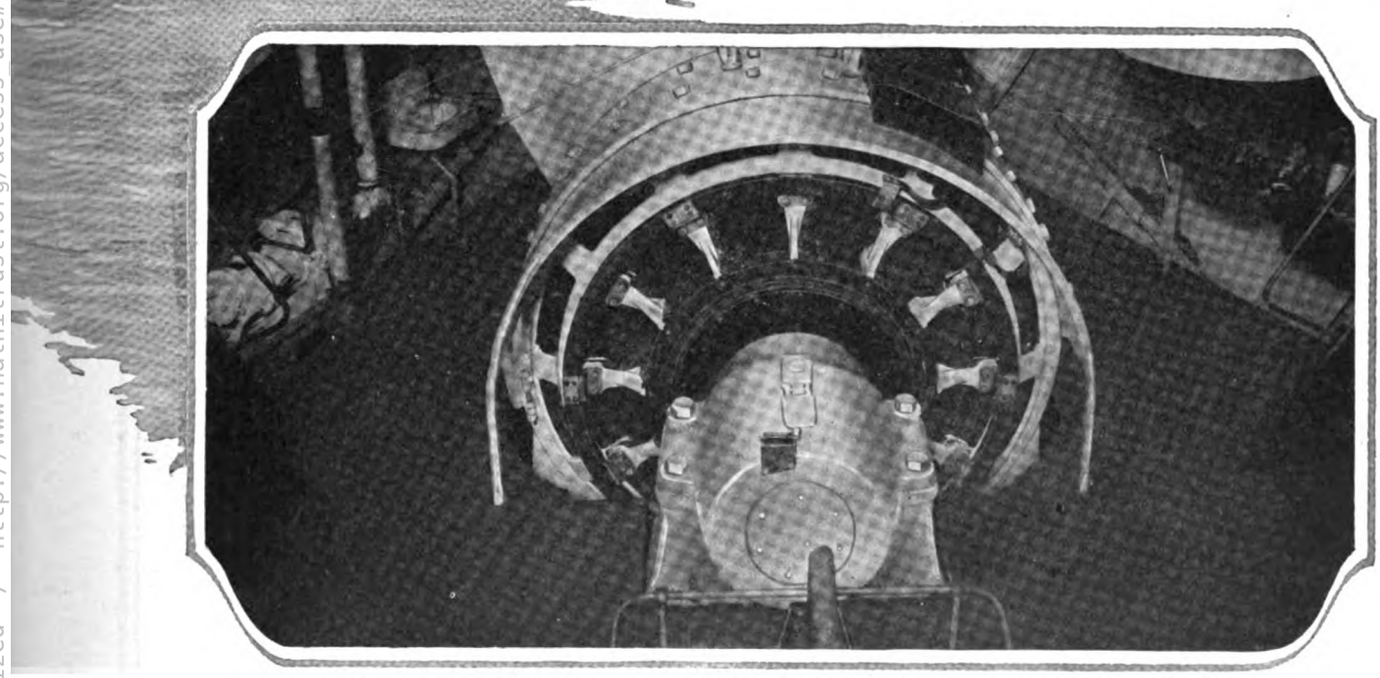
The Atlantic Refining Company's Tankers *Point Breeze, Sharon,* and *Bessemer*

The experience of the Atlantic Refining Company with Diesel-electric drive made inevitable its selection of this superior form of ship propulsion for the new tankers, ***Point Breeze, Sharon,*** and ***Bessemer.*** As a matter of course, it also chose General Electric equipment.

Owners and operators of Diesel-electric vessels invariably select this type of drive for new ships, for they are convinced of its superiority. An outstanding advantage of this form of propulsion is its maneuvering ability.

The compactness of the Diesel engines and the generators permits a reduction in the amount of space, and especially in the headroom, ordinarily required for the propulsion equipment. As the motor can be located at the stern of the ship, a long propeller shaft and shaft tunnel, with all the attendant disadvantages, are unnecessary.

These and other advantages explain why G-E Diesel-electric equipment has been termed "the modern marine drive."



Propulsion motor of the Diesel-electric tanker, M.S. Point Breeze. This motor is rated 1800 h.p. at 90 r.p.m.

123-11

ELECTRIC

SALES OFFICES IN PRINCIPAL CITIES

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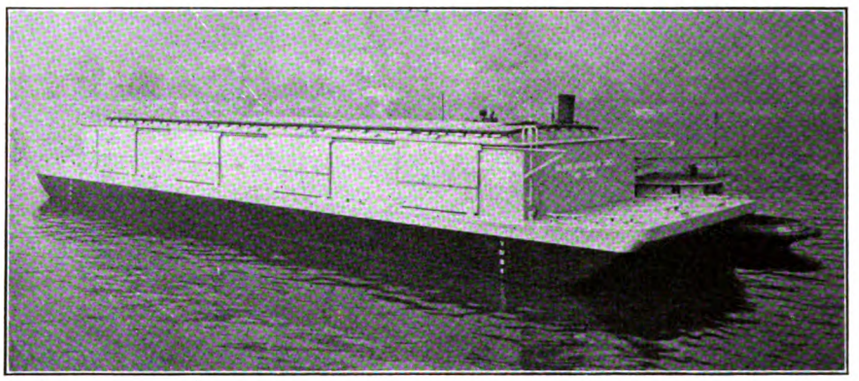
MARINE DEPARTMENT

of

American Bridge Company

FRICK BUILDING PITTSBURGH, PENNA.



BUILDERS OF

STEEL BARGES

for RIVERS *and* HARBORS

CAR-FLOATS

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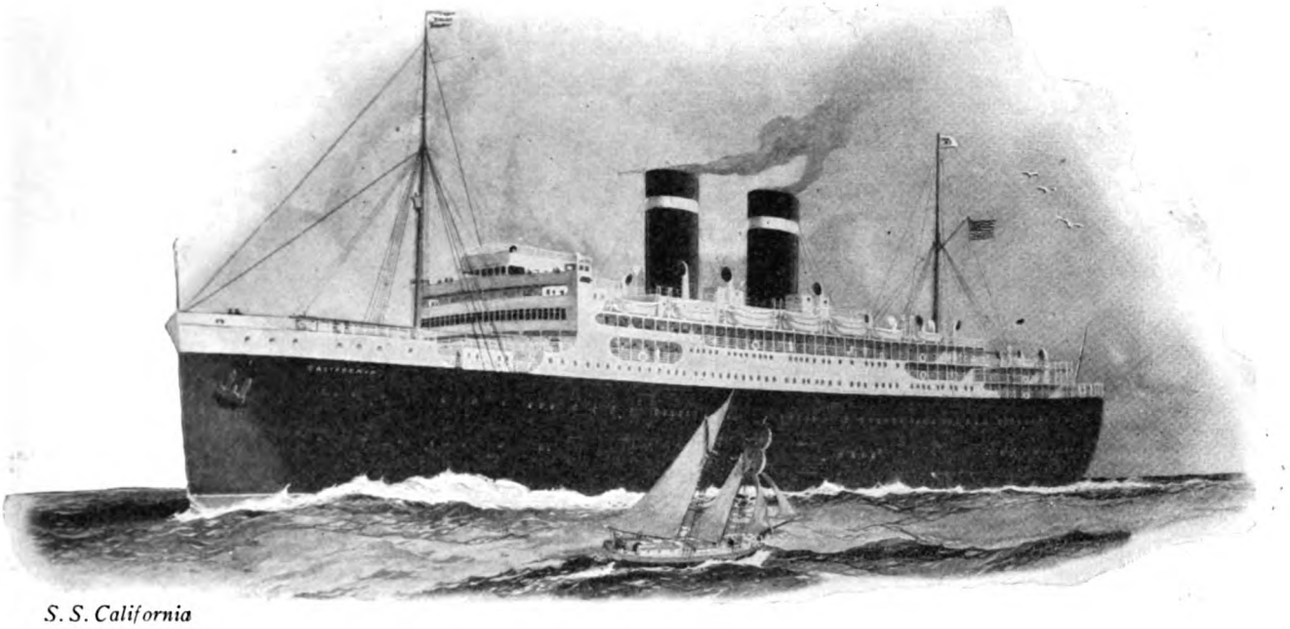
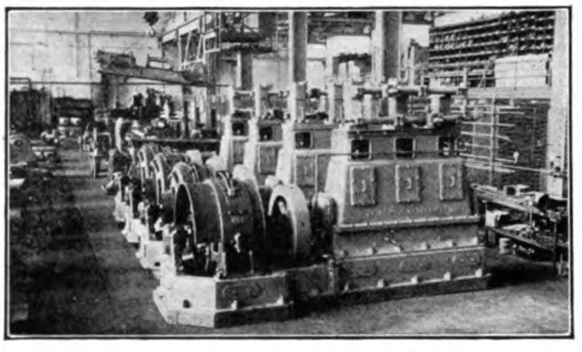


S. S. California

The California Uses BRUNSWICK—KROESCHELL REFRIGERATION



TYPE OF REFRIGERATING MACHINES SERVICING THE CALIFORNIA.

Three three-cylinder, vertical, single acting, semi-enclosed, part splash and part force lubrication type CO_2 compressors, direct connected to electric motors.

The sister ship of the California, now under construction, will also use Brunswick-Kroeschell Refrigeration. These two I.M.M. vessels are very large ships — but our experience is wide and varied, covering all classes of vessels from the largest passenger or freight ships down to the smallest pleasure vessel.

BRUNSWICK-KROESCHELL COMPANY
Refrigerating & Ice Making Machinery
NEW BRUNSWICK, N.J. - CHICAGO, ILL.

BRANCHES, AGENCIES AND SERVICE IN PRINCIPAL CITIES

BRUNSWICK-KROESCHELL

"The Standard for All Marine Installations"

200

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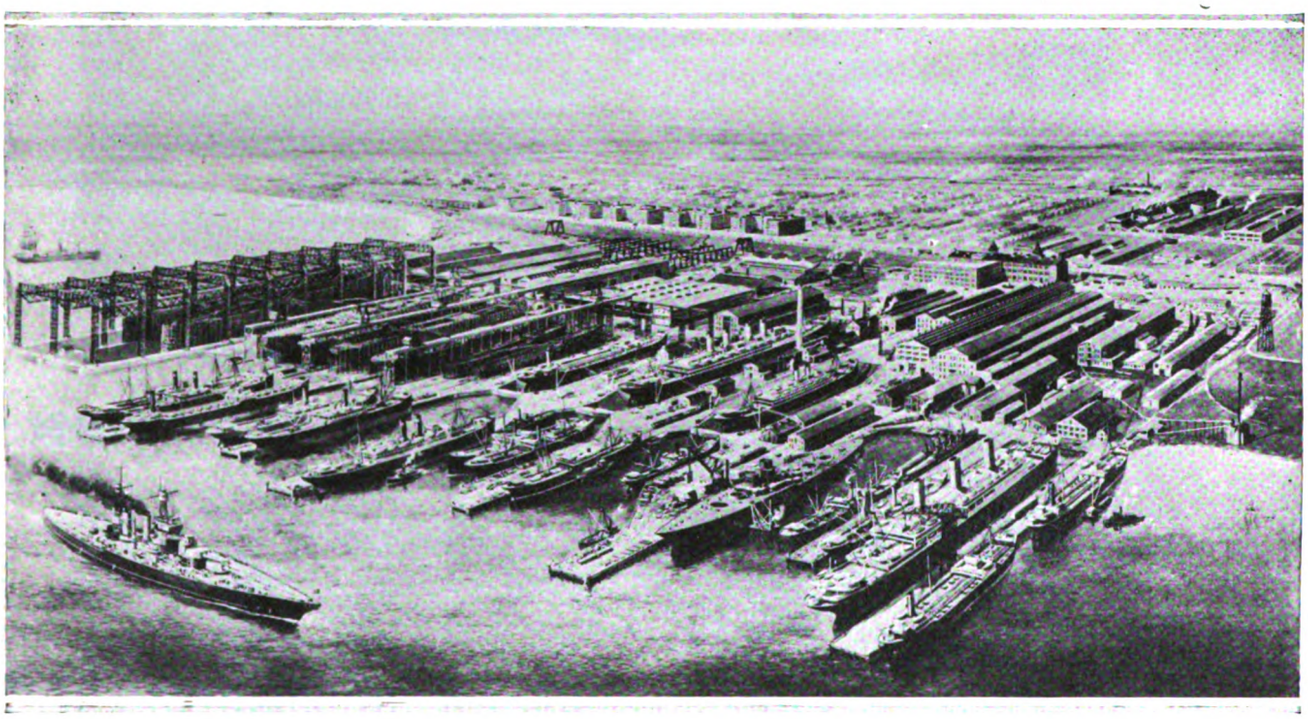
Shipbuilding and Repairing facilities unsurpassed in America



FOUNDRIES
FORGES
JOINER SHOP
3
LARGE
GRAVING
DOCKS

Here ships are completely overhauled and refitted at the same time

RESOURCES, capacity, experience and facilities are found here in a combination which develop the highest efficiency in the building, converting and repairing of ships.

In the final analysis, it is the proven economy, consistently demonstrated in all classes of work which has placed this organization at the head of preferred shipyards.

Every detail of construction, inspection and test are performed with an accuracy and thoroughness that insure maximum ship safety and operating economy.

Newport News Ship Building & Dry Dock Co.

Newport News, Va. *223 Broadway, New York City*

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The Plant Behind BESSEMER DIESELS

BESSEMER DIESEL Engines are built in one of the world's largest engine plants by an organization devoted exclusively to the manufacture of internal combustion engines.

The Bessemer Factory, which occupies 458,272 sq. ft. of floor space, is thoroughly modern in all its equipment and is laid out to effect the greatest possible production economies—from Bessemer's own huge foundry to shipping platform.

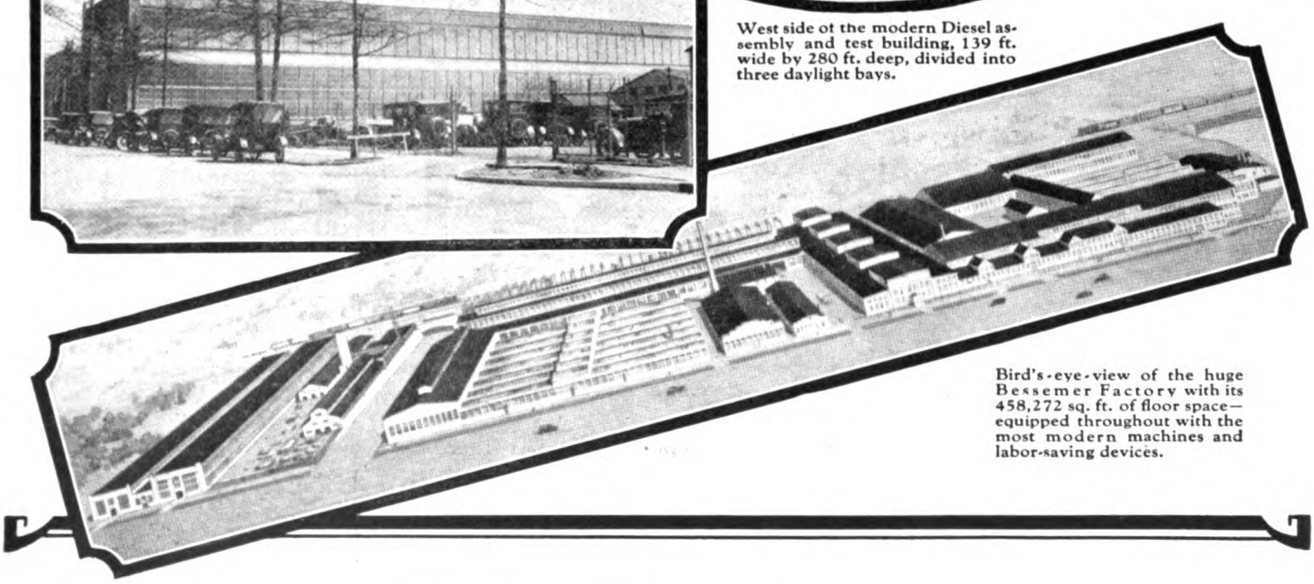
Behind each Bessemer Diesel is the background of 28 years of engine building experience and the Bessemer reputation for building only the very best.

THE BESSEMER GAS ENGINE COMPANY
12 Lincoln Ave. ∴ Grove City, Pa.

Front view of the Bessemer Diesel erecting plant with its 42,280 sq. ft. of floor space.

Looking down the west bay of the huge Diesel erecting floor where all Bessemer Diesels are assembled and tested.

West side of the modern Diesel assembly and test building, 139 ft. wide by 280 ft. deep, divided into three daylight bays.



Bird's-eye-view of the huge Bessemer Factory with its 458,272 sq. ft. of floor space—equipped throughout with the most modern machines and labor-saving devices.

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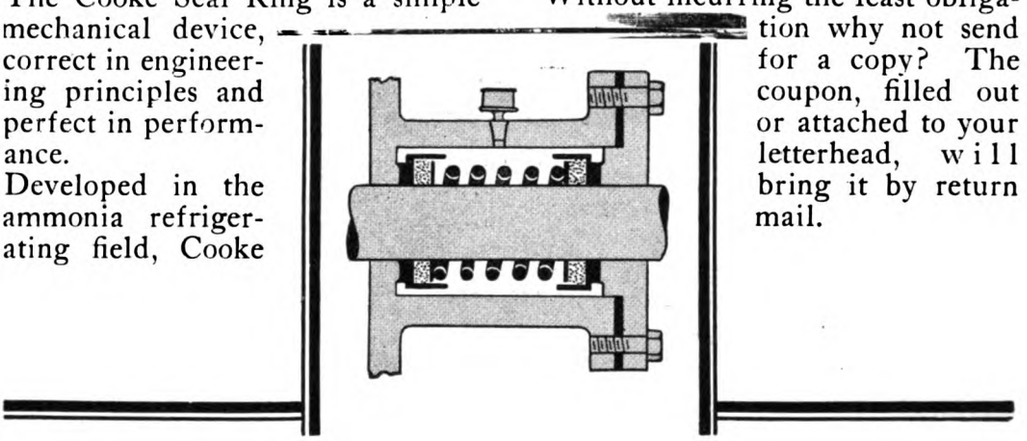
Gone! Pressure leaks, hot boxes and stuffing-box troubles in general

PERHAPS it sounds almost too good to be true, but careful experiments and actual use over a period of six years have proved that the Cooke Seal Ring will absolutely prevent leaks around a rotating shaft in a compressor or pump.

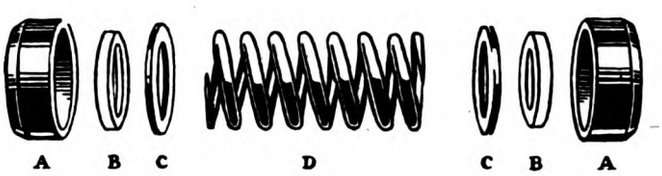
Bound leak-proof and frictionally tight *on,* and rotating *with,* the shaft instead of pressing against it —the Cooke Seal Ring makes a leakproof contact against the gland. A ground joint! Friction reduced by 90%. Only 3/16-inch ring of bearing surface!

The Cooke Seal Ring is a simple mechanical device, correct in engineering principles and perfect in performance.
Developed in the ammonia refrigerating field, Cooke Seal Rings are today in world-wide use for maintaining a leakless pressure (or vacuum) on a wide range of gases, fluids and air. Without renewals, maintenance or service (except for oiling) they have been giving perfect service on many types of machinery.

Engineers and others interested in problems of preventing leaks around a revolving shaft at any pressure or speed will be very much interested in a booklet which we have just issued. It tells fully about this revolutionary invention. Without incurring the least obligation why not send for a copy? The coupon, filled out or attached to your letterhead, will bring it by return mail.



a—The Cooke Seal Ring, itself
b—Rubber packing
c—Follower Ring
d—Helical spring



The entire assembly is lubricated and sealed with oil from the stuffing box, now used as an oil reservoir.

COOKE Seal Ring

24 N. Green Street, Chicago, Ill.

ROTATES WITH

Cooke Seal Ring,
24 N. Green St., Chicago.
Please send me your FREE booklet without obligation.
Name .....
Address .....
City.....State.....

THE SHAFT

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GRAVING DOCKS in Repair and Reconditioning Work

A series of talks, of which this is the third, on the importance of this type of drydock for survey, observation and repair activities.

WHEN the freight steamer "Lord Dufferin" was rammed and sunk while at anchor and subsequently raised and placed in graving dock, a survey disclosed that about 64 feet of her entire stern was cut off.

Being unable to recover the damaged portion, it was found necesssary to rebuild her with entirely new material.

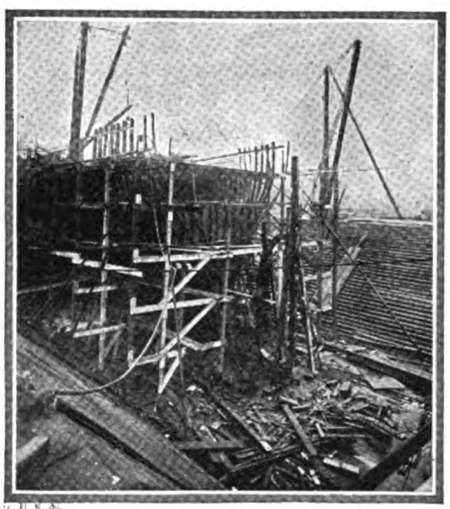
Placed on the substantial and perfectly aligned blocks of the graving dock, the damaged vessel was as comfortably settled as though on her original ways.

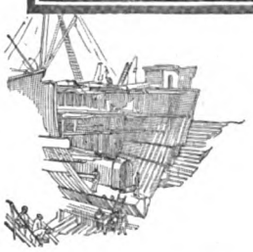
During the time required for preparing the hull work, our engineering force replaced the missing machinery.

At the completion of the work a second careful survey disclosed that every beam and frame had been perfectly aligned and took up its portion of the legitimate strain of the ship requiring practically no recalculation or readjustment.

The whole job of redesigning, furnishing and rebuilding was accomplished in eighteen and a half working days—an extraordinary tribute to the efficiency of a graving dock in repair and reconditioning work of this character.

Setting the new stern piece





The only two privately owned graving docks in the Port of New York

Todd craftsmanship and wide experience in building, repair and reconditioning work is as complete as its facilities and equipment for handling it, and in addition comprises the only two privately owned graving docks in the Port of New York.

TODD SHIPYARDS CORPORATION

Main Office: 25 Broadway, New York, N.Y., U.S.A.—Cable: Robin, New York. All codes

Twelve Shipways—Twenty-two Floating Docks—Two Graving Docks

Robins Dry Dock & Repair Company
Erie Basin, Brooklyn, N. Y.
Todd Shipbuilding & Dry Dock Co., Inc.
Mobile, Ala.
Todd Engineering, Dry Dock & Repair Co.
New Orleans, La.
Tietjen & Lang Dry Dock Company
Hoboken, N. J.

TODD
NEW YORK, U.S.A.

Todd Dry Dock Engineering & Repair Corp.
Foot of 23rd Street, Brooklyn, N. Y.
Todd Dry Docks, Inc.
Harbor Island, 16th Avenue, S.W. Seattle, Wash.
Todd Oil Burners, Ltd.
London, England

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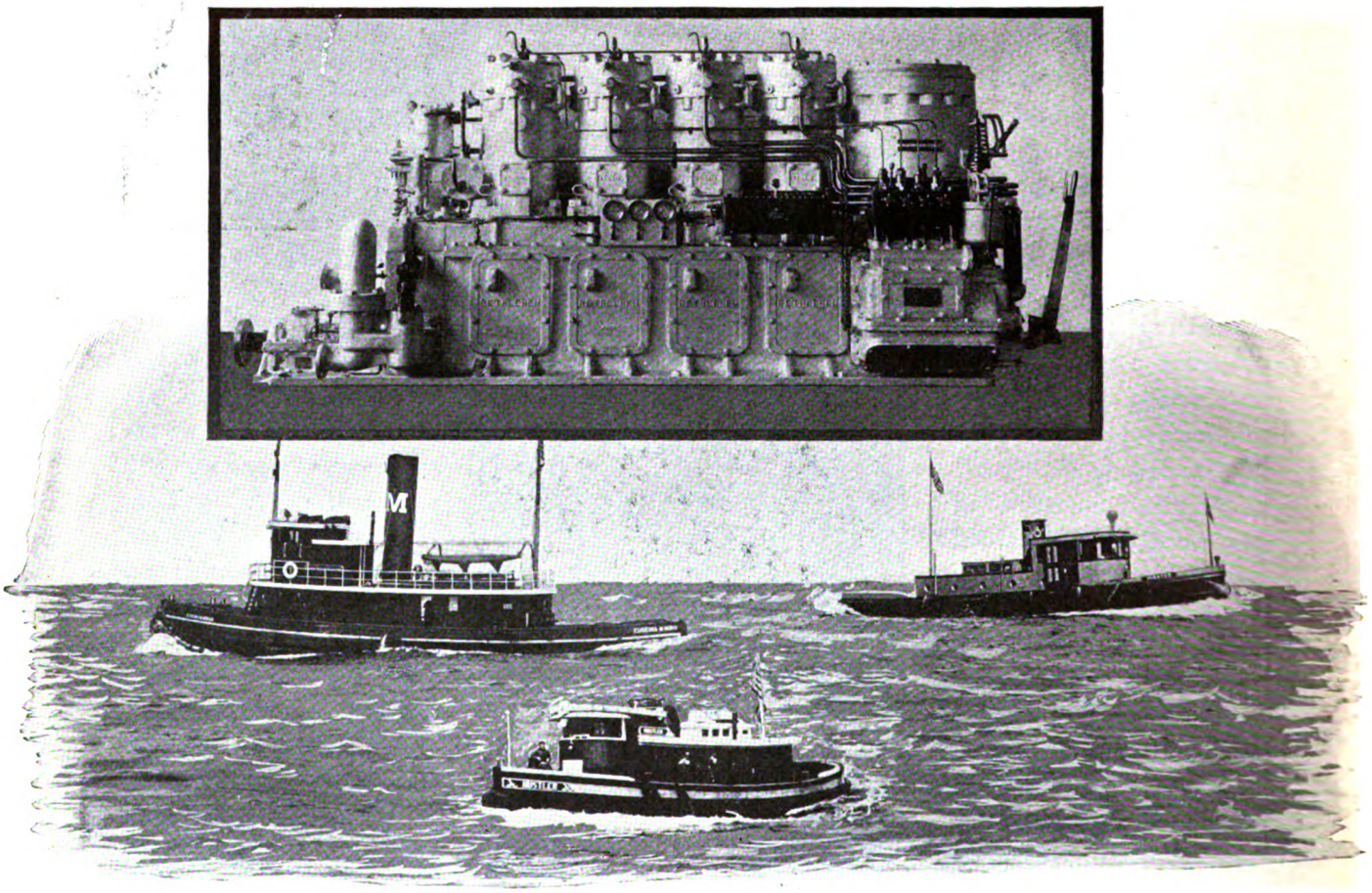
Dependable Power — *for* **Small Boats . . .**

Bethlehem Type M Diesel Engines are giving reliable service as auxiliary units in large vessels and as prime movers for yachts, tugs, work boats, ferries and other small craft.

Compactness, sturdy construction and simplicity of control make of the Bethlehem Type M Diesel Engine a dependable source of power.

Our Engineers will gladly consult with you.



BETHLEHEM STEEL COMPANY, *General Offices:* BETHLEHEM, PA.

District Offices:

New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo
Cleveland Cincinnati Detroit Chicago St. Louis San Francisco Los Angeles Seattle Portland

Bethlehem Steel Export Corporation, 25 Broadway, New York City, Sole Exporter of Our Commercial Products

BETHLEHEM

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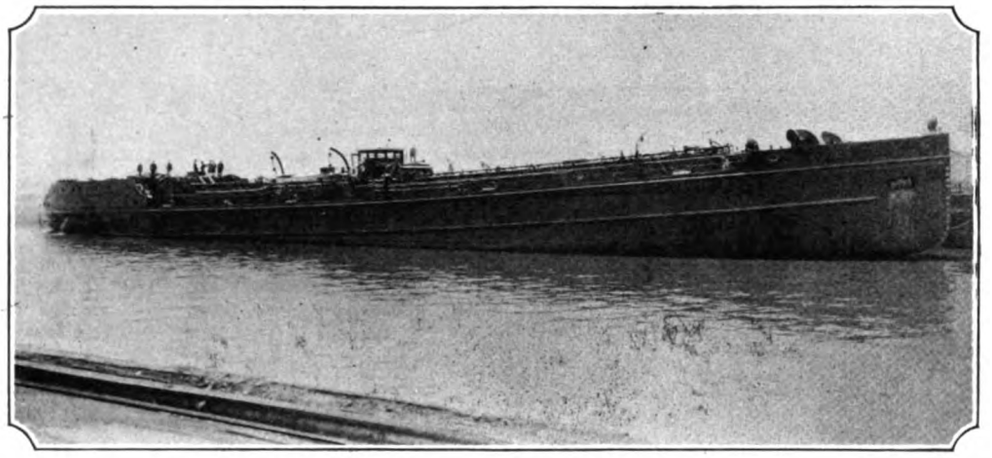
WINTON
Diesel Engines



OIL TANKER TYDOL. Length overall 258' 8". Beam 40' 0". Draft, 12' 0". Built by Sun Shipbuilding and Dry Dock Company. Designed and owned by Tidewater Oil Company, New York City. Main power plant, two Model 121, six-cylinder, Winton-Diesel Engines, each developing 350 H.P. at 225 R.P.M. Auxiliary power plant, two Model 116-4, four-cylinder. Winton-Diesel Engines, each direct connected to a 75 K. W. 230 volt. generator.

The WINTON ENGINE COMPANY

CLEVELAND OHIO U.S.A.

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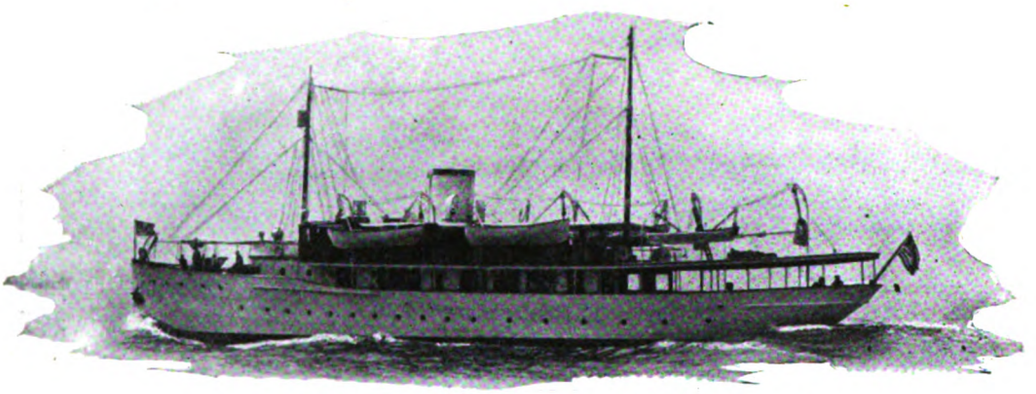
EDNORINA RUSSELL III ELDOMA

Three of the many Maxim Silenced tugs—two of the above operate in Puget Sound, the third, RUSSELL III, operates in New York Harbor.

If Tugs Have Maxim Silencers



The SUMAR is a typical example of the trend toward Maxim Silenced yachts. Many others are similarly equipped.

Yachts Most Certainly Should

ONE would hardly expect tug-boat captains to fully quiet their Diesel engines for the mere pleasure of gliding silently over the water.

They use Maxim Silencers because of the greatly increased safety.

Are yachts more immune to the dangers of fog and darkness than tugs?

Full operating silence is essential for safe cruising. This can be had *only* by means of Maxim Silencers.

That's why yacht owners insist upon them.

Maxim Engineers are ready to co-operate with architects and builders on this most important phase of yacht design—the Silencing phase.

The time to start is before the keel is laid or remodeling started.

THE MAXIM SILENCER COMPANY
Hartford, Conn.
Agencies in Principal Cities

Maxim Silencers Smash Noise Mufflers Can Only Dent It

For oil and gas engines, air compressors, uniflow steam engines, positive pressure blowers, reducing and safety valves and other equipment having noisy intakes or exhausts use Maxim Silencers.

MAXIM SILENCER

Reg. U.S. Pat. Off.

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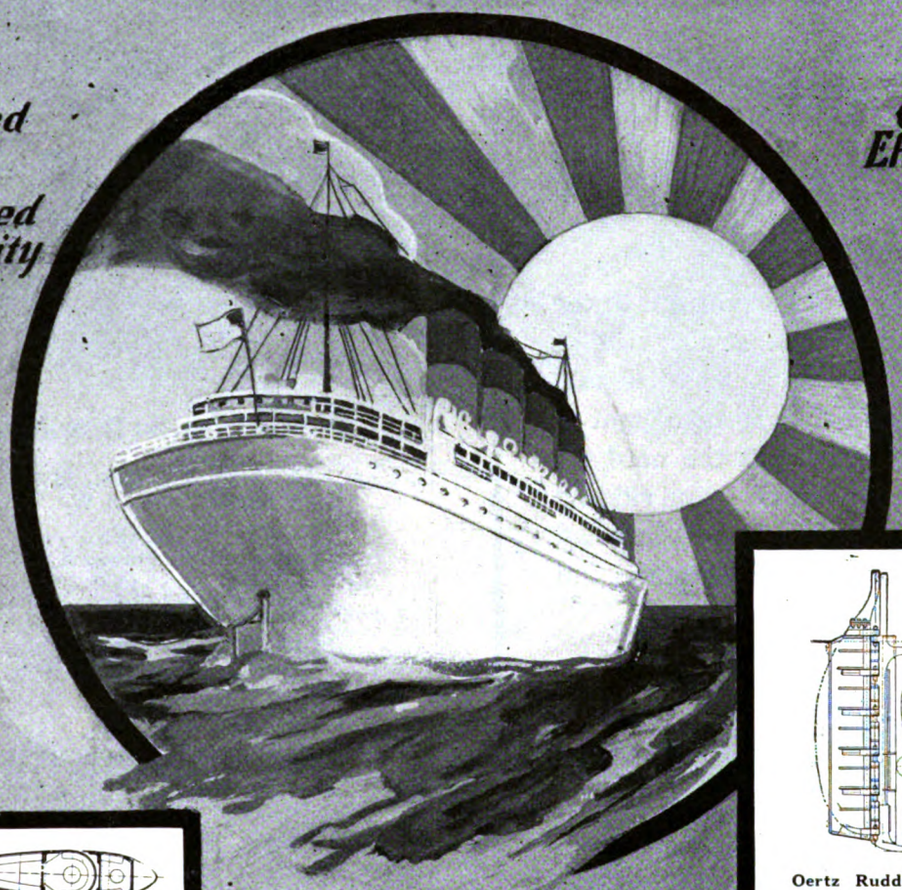
Steer a Straight Course by eliminating yawing with *the* OERTZ RUDDER

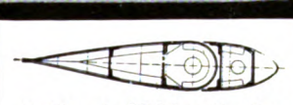
Increased Speed

Improved Steerability

Greater Efficiency

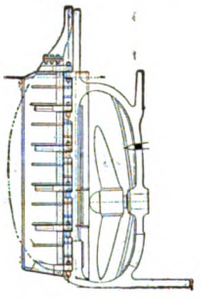
Less Fuel





Rudder in Midship Position

Oertz Equipped Ships Show Hardly Noticeable Wakes.



Oertz Rudder Installed On Existing Vessel

~~~~~ This is your course with the ordinary rudder. - - - This is your course with the Oertz Rudder. Its special streamline 2-part construction prevents yawing, thus greatly decreasing number of steaming days. Other advantages: Steering engine requires 30-50% less power; no rudder tackles needed in heaviest weather; strong vibration in stern practically eliminated; increases speed 6-13% or correspondingly reduces required S.H.P. 8-15%; improved steerability, turning radius less than half of standard rudder.

The Oertz Rudder has two parts—a fixed forepart about 1/3 the length and a moveable rear part. The greatest thickness is at the pintles. Both parts at all angles of helm always have streamline form. Small angles of helm give the rudder almost exact aerofoil form. This means minimum resistance to the waterflow and the greatest pressure sideways (steering power) even for extreme angles of the helm. The Oertz Rudder is endorsed by the American Bureau of Shipping, and Lloyds Registry of Shipping.

OERTZ STREAMLINE RUDDER CORPORATION

75 West Street

New York City

230 vessels (1,200,000 deadweight tons) equipped with Oertz Rudders within two and one half years. No change in design has been found necessary since the original patents.

Oertz Streamline Rudder Corp.
75 West St., N. Y. C.
Without obligation to us, please give more details about the Oertz Rudder.
Name .....
Address .....

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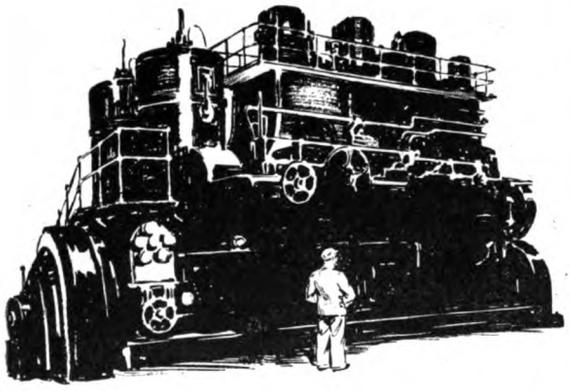
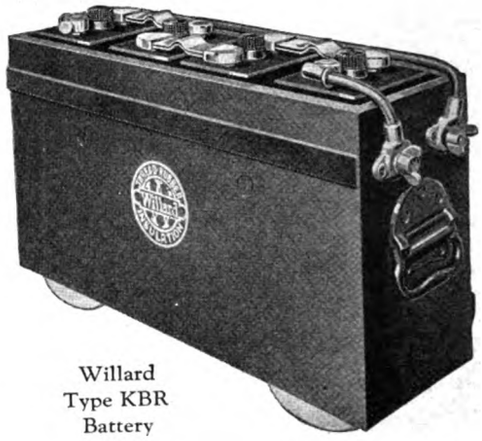
~~~~~

Willards Serve and Save on Diesel-Driven Ships

Willard Threaded-Rubber Batteries are built for hard jobs. That's why they serve so well aboard ship.

Willards save by helping out at the hoists, pumps and other electrically-driven auxiliary machines when help is needed. And they furnish light in port, doing away with the need for an engine-room watch—and ridding the ship of the noise and vibration that is unavoidable when engines and generators are in operation.





Willard Type KBR Battery

This battery is the Willlard Type KBR—with Willard Threaded-Rubber Insulation between the plates. It can be shipped charged bone dry, and need not be prepared for service until the installation is made. All through the life of the battery the Willard Threaded-Rubber Insulation protects the life of the battery plates.

WILLARD STORAGE BATTERY CO.
CLEVELAND, OHIO

Address Your Nearest Distributor

ATLANTA, GA.
551 Whitehall Street, S. W.

BOSTON, MASS.
195 Albany St., Cambridge A

CHICAGO, ILL.
3916 So. Canal Street

CLEVELAND, OHIO
1920 Scranton Road

DALLAS, TEXAS
2213-2215 Griffin St.

DETROIT, MICH.
5946-54 Cass Ave.

KANSAS CITY, MO.
2020 Grand Avenue

NEW YORK, N. Y.
630 West 28th St., Terminal Store No. 14

PHILADELPHIA, PA.
3619-21 Walnut St.

PORTLAND, ORE.
106 14th Street, North

SAN FRANCISCO, CAL.
480 Second St.

Willard STORAGE BATTERIES

The Willard Battery Men Service All Makes and Sell Willards for All Purposes

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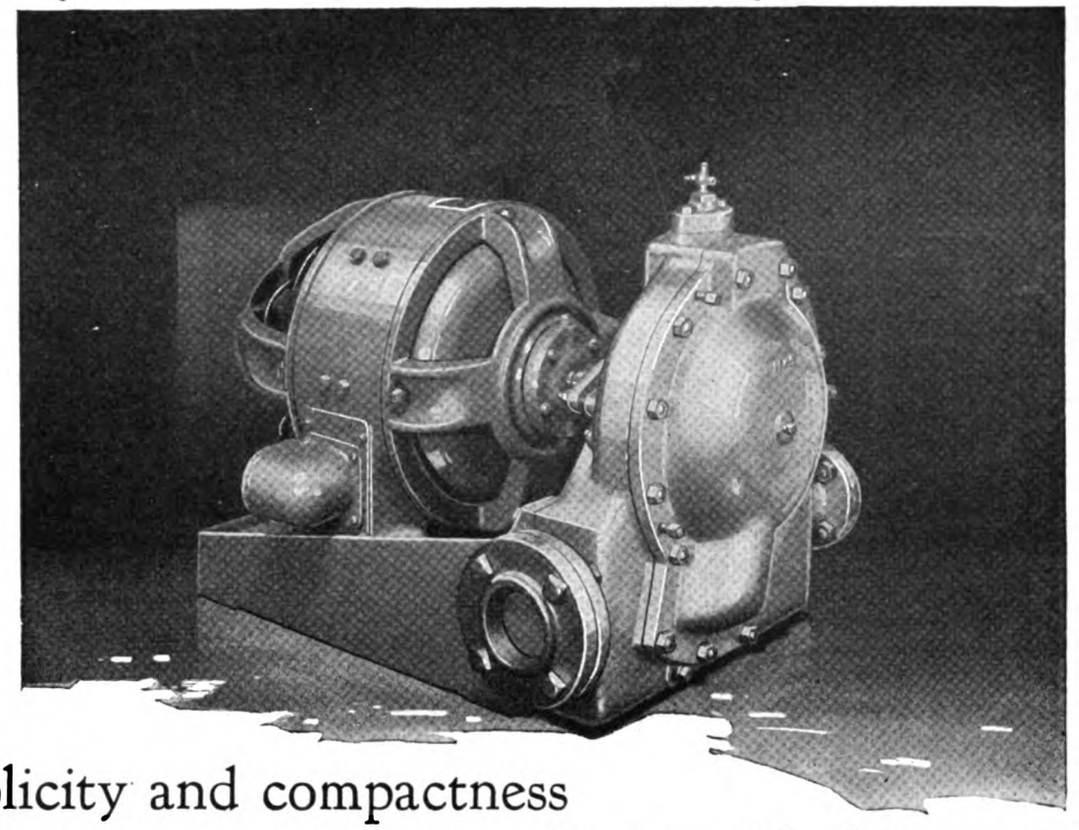

Simplicity and compactness distinguish this centrifugal

There is only one stuffing box—the pump impeller being mounted on an extension of the same shaft that carries the motor armature.

No bearings are in the pump casing. The side head can be quickly unbolted and the working parts inspected without breaking piping connections or disturbing shaft alignment. Or the impeller can then be taken out without touching the packing or bearings.

A marked simplicity is noticeable in design and construction. A simplicity which makes the Jennings Centrifugal Pump most dependable. Its compactness permits installation in any convenient or out-of-the-way location.

Standard high speed motors are used. In this way the better efficiency is obtained which high speeds make possible.

Please use the coupon in writing for further information.

Jennings Pumps are supplied in capacities and pressures suitable for use as:

- Salt and fresh water cooling pumps
- Engine room bilge pumps
- Fire and bilge pumps
- Salt and fresh water sanitary pumps
- Fresh water service pumps
- Deck pumps

NASH ENGINEERING COMPANY
132 Wilson Road So. Norwalk, Conn.

Jennings Pumps

MAIL THIS COUPON ~ TODAY

Nash Engineering Co.,
132 Wilson Road, South Norwalk, Conn.

☐ Send bulletin on Jennings Centrifugal Pumps for marine service.

☐ Also recommendations for handling.....
g.p.m.....against.....lbs. per sq. in. pressure.

Name..... Address.....

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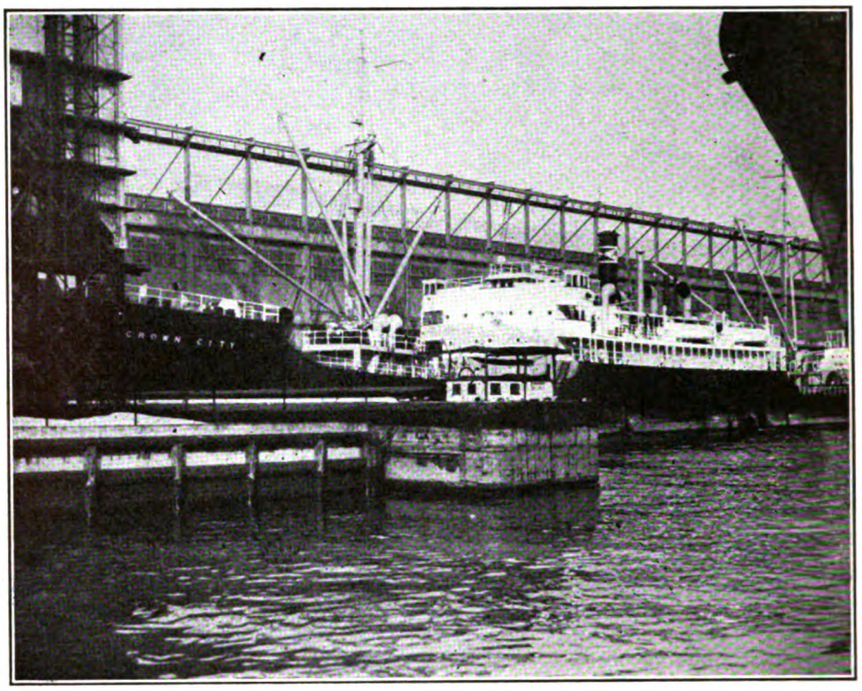
U. S. SHIPPING BOARD
M.V. "CROWN CITY,"
Operated by
ROOSEVELT
STEAMSHIP
COMPANY



"CROWN CITY" MAKES GREAT RECORD ON 25,641 MILE TRIP!

Lubricated with TEXACO URSA OIL for Diesel Engines

"Not One Penny for Engine Repairs"

The recently converted "Crown City," of the U. S. Shipping Board, has *again* demonstrated the remarkable lubricating efficiency of TEXACO URSA OIL for Diesel engine lubrication.

This ship completed its maiden trip as a motor vessel: A 25,641 mile round trip voyage, with the longest stretch without stop (Panama to Brisbane) 7,719 miles.

Average for the 7,719 miles.....11.5 knots per hr.
Average for round trip of 25,641 miles..10.7 knots per hr.

The "Crown City" is driven by a 3,000 H.P. McIntosh & Seymour Single Acting 4 cycle air injection Diesel engine, lubricated as follows:

CYLINDERS.....TEXACO URSA OIL HEAVY
AIR COMPRESSORS..TEXACO URSA OIL
BASE LUBRICATION.TEXACO ALGOL OIL

(*Texaco Algol oil has the same characteristics as URSA—only lighter in body*)

TEXACO URSA Oil is a clear, clean, pale colored oil; and, as this performance demonstrates, it has the proper viscosity for work.

As it has an exceptionally low pour test it will not clog oil pipes, even when exposed to low temperatures.

It clings to the surfaces of cylinder walls and piston rings—maintains compression, enabling easy starting and delivery of FULL POWER.

Ask to see a sample of TEXACO URSA Oil—the oil that was used on a 25,641 mile round trip "without one penny for engine repairs."

STOCKS KEPT AT PORTS THROUGHOUT THE WORLD

THE TEXAS COMPANY

TEXACO PETROLEUM PRODUCTS

Dept. LD—17 Battery Place, New York City

OFFICES IN PRINCIPAL CITIES

There is a TEXACO Lubricant for every purpose aboard ship.

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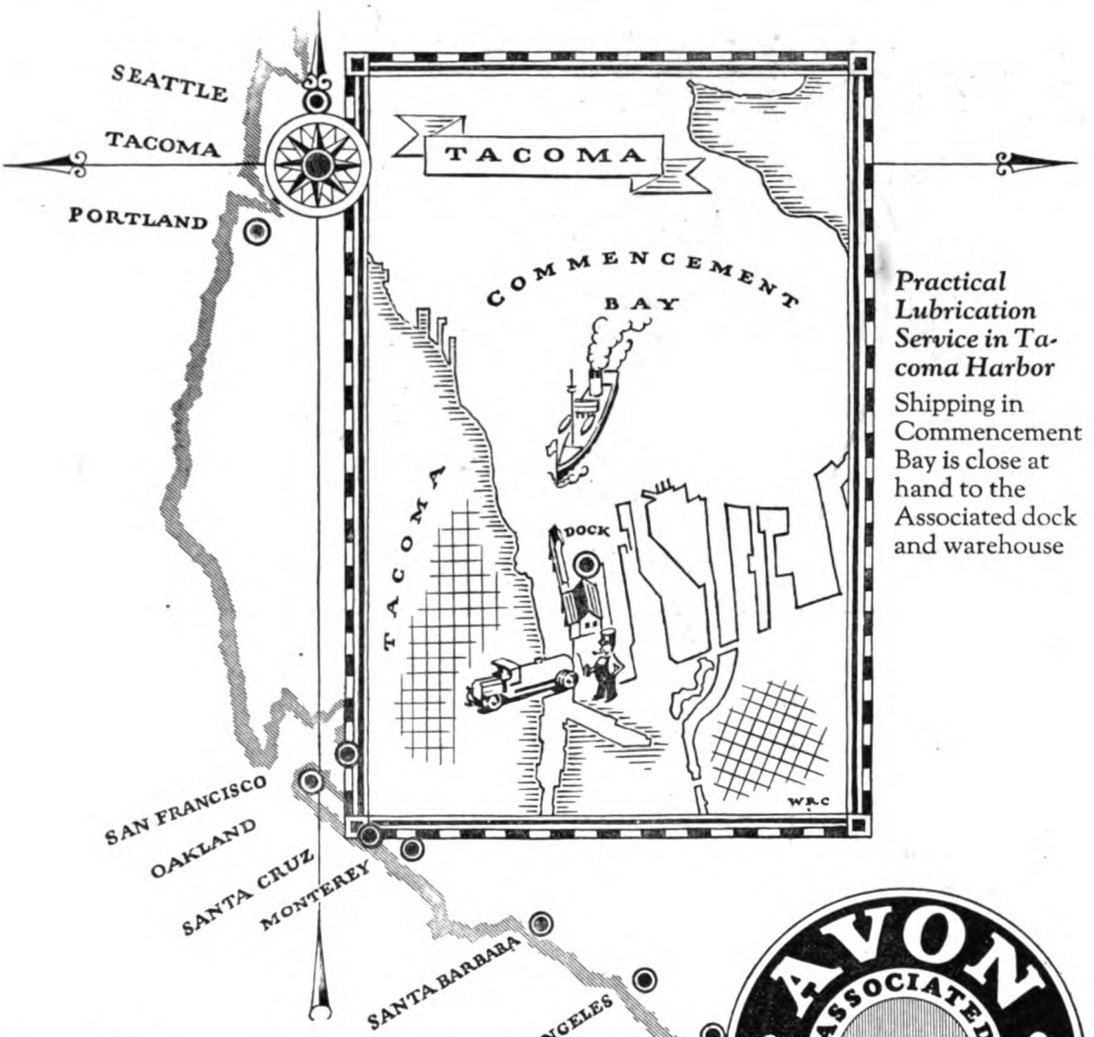

Practical Lubrication Service in Tacoma Harbor

Shipping in Commencement Bay is close at hand to the Associated dock and warehouse

"Ready to serve"

from Seattle to San Diego!

A CHAIN of Associated "service stations of the sea" covers the ports of the Pacific Coast from Puget Sound to the Mexican border. And wherever you find one of these plants, you will find Associated Practical Lubrication Service at your immediate disposal.

No matter when you call or where you call from, you can be sure of prompt delivery of any marine lubricant that you may need on shipboard.

You will always find a complete stock of Avon *sustained quality* Marine Lubricants on hand with gasoline, distillate and fuel and Diesel oil bunkering facilities at Seattle, Tacoma, Portland, San Francisco, Oakland, Los Angeles Harbor and San Diego.

Call on this "really practical" service day or night. If you wish it your ship will be met as you dock.

ASSOCIATED OIL COMPANY

Sustained Quality Products

AVON LUBRICANTS — ASSOCIATED MARINE OIL COMPANY

Sustained Quality Marine Lubricants

Avon Mardex
Avon Tropdex
Avon Aquadex
Avon Nepdex
Avon Marine Engine Oils
Avon Refrigerator Oils
Avon Steam Cylinder Oils
Avon Compressor Oils
Avon Dynamo Oils
Avon Turbine Oils
Cycol for Diesel Engines
Cycol Motor Oils and Greases

M-8

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Searchlights!!!

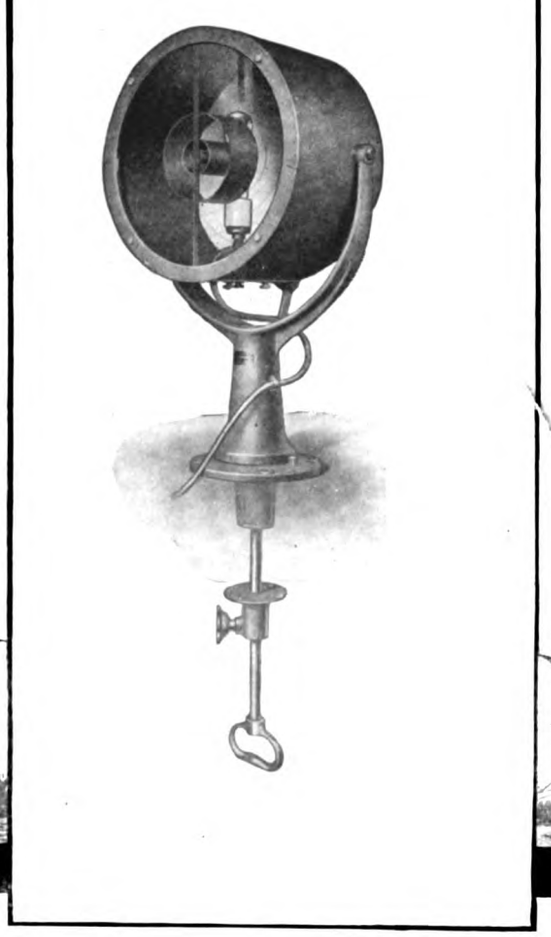
Why Every Vessel Should Have at Least One

THE Sperry Incandescent Searchlight is one of the most useful and least expensive fittings on the bridge of the merchant vessel—because (1) A conveniently located snap-switch turns it on or off surely and instantly. (2) Its current requirements are exceedingly moderate. (3) No tinkering or frequent replacements are necessary. (4) It is easily convertible to a floodlight or searchlight, as required. (5) It is staunch and light, being constructed of corrosion resisting aluminum alloy, bronze and monel metal. (6) It has a high grade, heavy glass reflecting mirror. (7) It is provided with stray light shields, giving a powerful well formed beam. (8) It is made in types and sizes to suit every purpose. (9) It is designed, built and guaranteed by one of the world's largest builders of high powered searchlights.

Every vessel should have at least one Sperry Incandescent Searchlight for, (1) It is an important aid to navigation—facilitates picking up channel buoys, docking and other harbor and inland water work. (2) It is of economical value as a floodlight for handling cargo or other work about the decks. (3) It is always ready for one of those emergencies—when a reliable searchlight is "worth its weight in gold."

A complete stock of these lights is kept available at our factory, and the most generally used types are in stock at our various branch offices.

SPERRY



THE SPERRY GYROSCOPE COMPANY
LONDON BROOKLYN, N. Y. TOKYO

Branch Offices in U. S.

CLEVELAND	LOS ANGELES	SAN FRANCISCO	SEATTLE
414 Rockefeller Building	236 Avalon Boulevard	326 Matson Building	404 Central Building

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Diamond Soot Blowers

Keep Pace with Progress

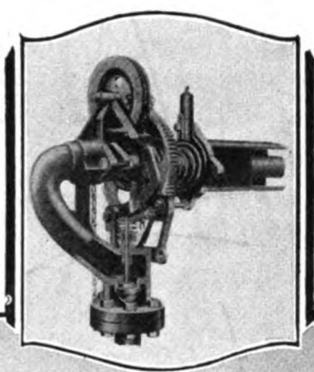
As was to be expected, the world's largest electric ferries, the Key System Transit Company's "Peralta" and "Yerba Buena" represent a progressive step in ferry boat engineering.

No less representative is the fact that Diamond Soot Blowers were installed aboard these ships. Clean boiler tubes—clean as only Diamond Soot Blowers can make them—effect a marked reduction in fuel costs, allow the utilization of the full capacity of the boilers, and increase speed—and at a cost considerably less than by hand cleaning methods.

As there is a Diamond Soot Blower for every type of marine boiler, you too can reduce the operating expense of your ship.

Write for your copy of "Increasing Marine Profits"

DIAMOND G-9
automatic-valved
SOOT BLOWER



BALTIMORE, MD.
Tate Engineering Co.
17 South Gay Street

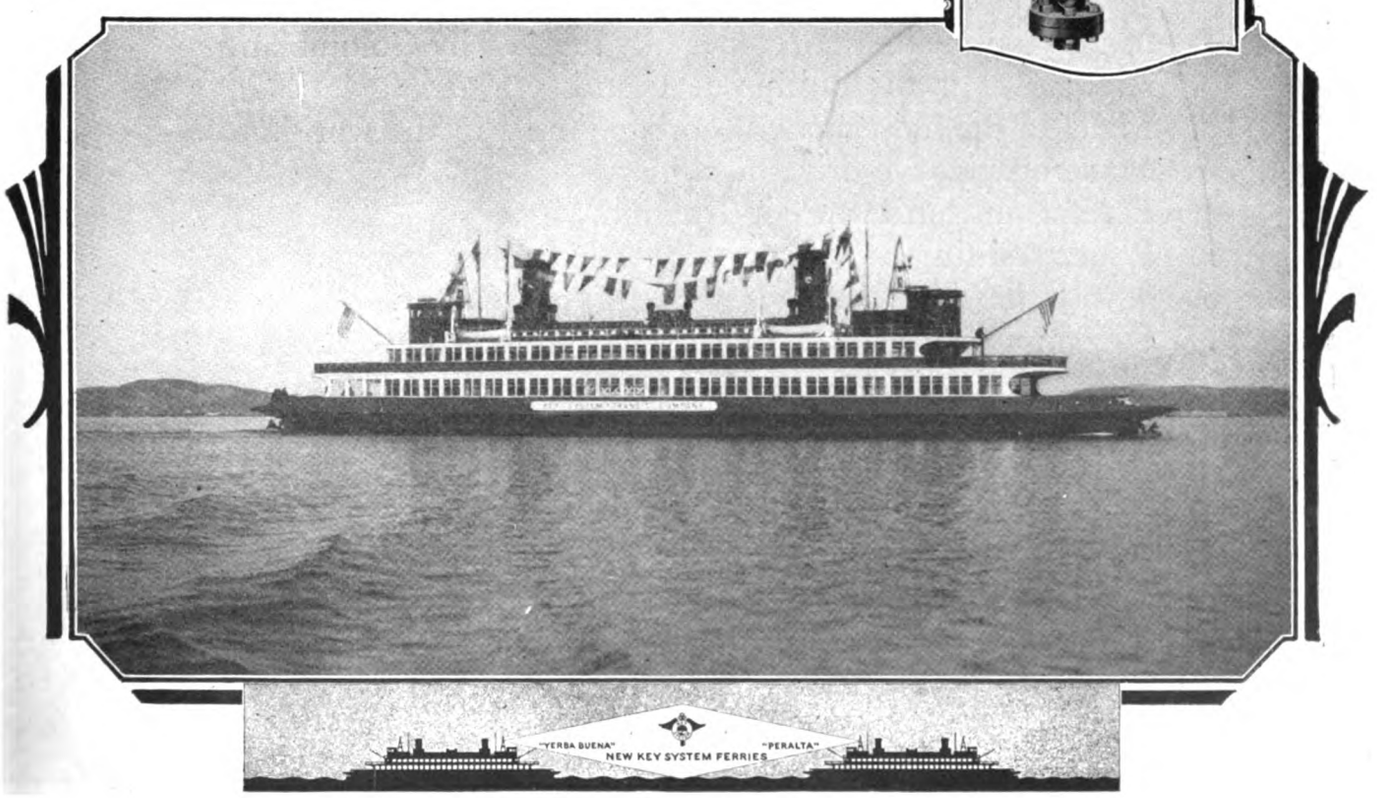
NEW ORLEANS, LA.
Graham Engineering Co.
208 Godchaux Bldg.

NEW YORK, N. Y.
Marine Office
12 East 41st St.

SAN FRANCISCO, CAL.
Western Engineering Co.
327 Matson Bldg.

SEATTLE, WASH.
Allan Cunningham
839 Railroad Ave. S.

Diamond Power Specialty Corporation
Detroit, Mich.



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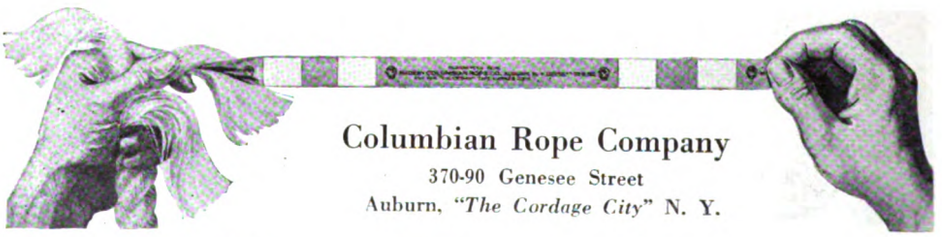
Columbian's Ten Points of Superiority

These ten characteristics of every Columbian *Tape-Marked* Pure Manila Rope

will show every rope user that he is getting more for his money when he buys Columbian. They will also point out the special advantages of using this Guaranteed Rope.

1. Made from manila fibre, specially selected by Columbian representatives in the Philippine Islands.
2. Made in the most modern cordage mills in the world.
3. Made on positive drive machinery.
4. Perfect and uniform construction.
5. Water resisting.
6. Always flexible.
7. Exceptional service.
8. No greater cost.
9. *Tape-Marked.*
10. Every foot guaranteed.



Columbian Rope Company
370-90 Genesee Street
Auburn, "*The Cordage City*" N. Y.

Branches: New York Chicago Boston New Orleans

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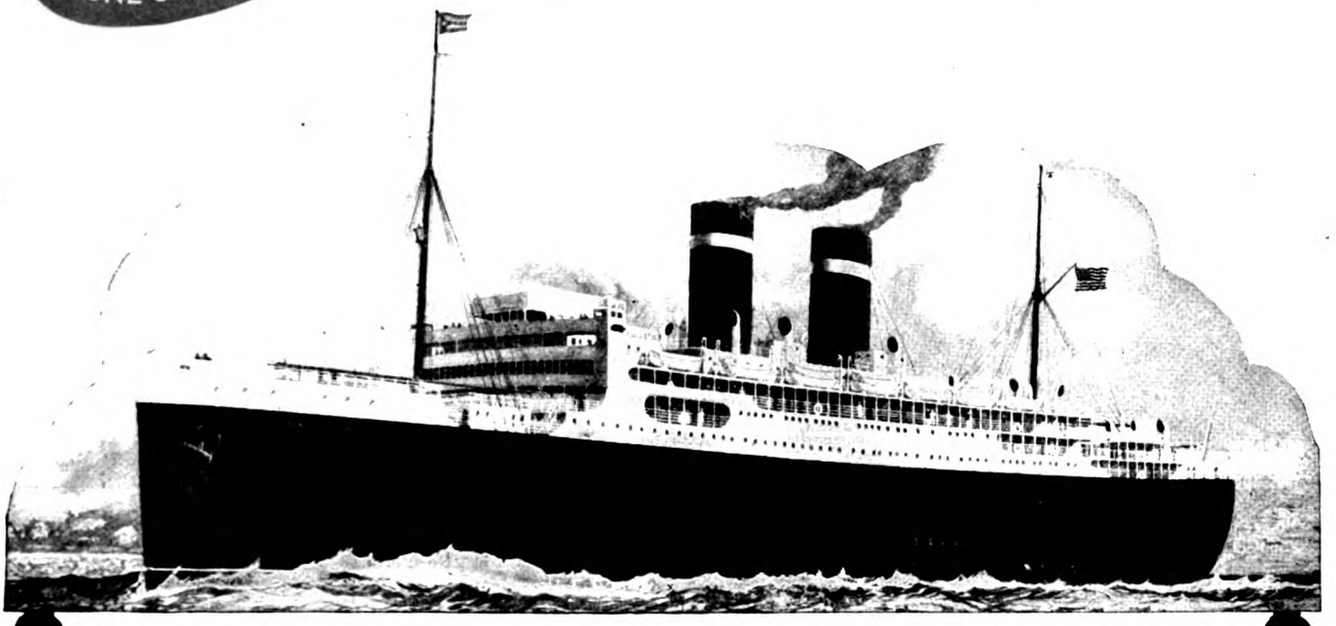
ANOTHER LINK

in the long chain of ships that carry "NACO" Anchor Chain



THE new S. S. California recently launched at Newport News S. B. and D. D. Co. for coast to coast service between New York and California, is the largest merchant ship built in the United States.

Her equipment, selected throughout for reliability and efficiency, includes 335 fathoms of 3⅛ inch NACO STEEL ANCHOR CHAIN, proof tested to a load of 534,060 pounds:—More than 50% greater than the proof load specified for forged chain of the same size; *A great reserve strength for emergency.*

Another important advantage in Naco Chain is the absolute uniformity in size and shape of links, which assures perfect operation over the wildcat, thus avoiding delays when time is valuable.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

10600 QUINCY AVE. CLEVELAND, O.

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MORSE
DRY DOCK & REPAIR CO.

PORT OF NEW YORK

A name synonymous with the development of the Port of New York.

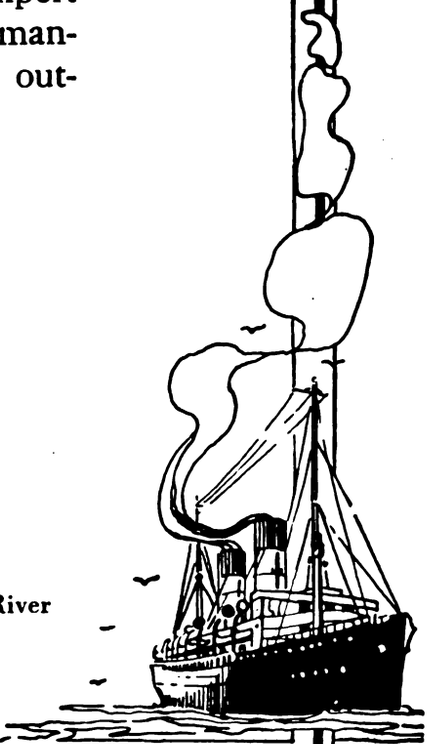
During the forty-three years of service to the shipowners of America and Europe our organization has grown until today it is conceded that our plant and facilities are unequalled in the ship repair business.

Ample docking facilities and modern equipment are combined with expert supervision and competent workmanship to make the Morse yard the outstanding organization in the port.

MAIN PLANT
Foot of 56th Street
Brooklyn, N. Y.

UPPER YARD
Foot of Prospect Avenue
to 19th Street
Brooklyn, N. Y.

NEW YORK SHOP
23rd Street and North River
New York City



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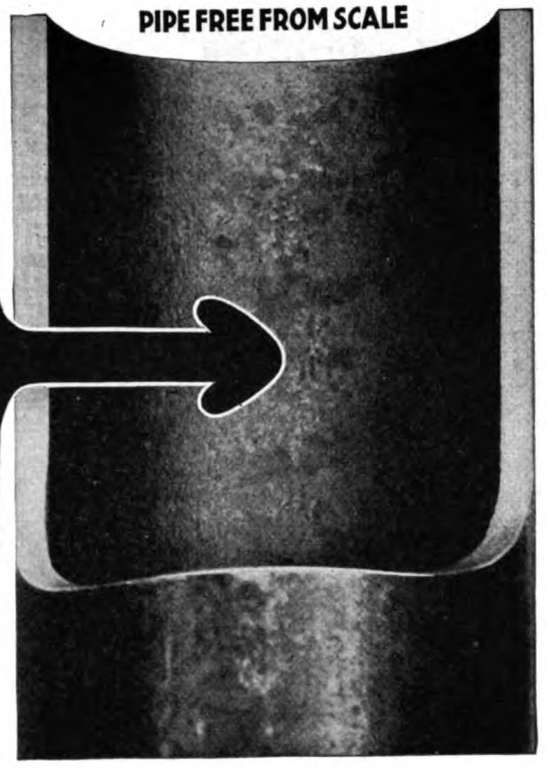
This Kind of PIPE GIVES BETTER SERVICE



"NATIONAL" Pipe (butt-weld sizes ½ to 3-inch) is made by the Scale Free Process—an exclusive feature applied only to this pipe. This process consists of special rolling operations that remove the mill-scale (see pipe at left) from the pipe walls, leaving clean, smooth surfaces (see pipe above)—with the following advantages in service:

1. *Less corrosion—particularly pitting.* Mill-scale is one of the principal causes of pitting; it is electronegative to the pipe metal and sets up galvanic action causing pitting around the scale areas—therefore, when scale is removed, longer life is obtained from the pipe.
2. *Clean, smooth surfaces*—forming a better base for galvanizing or other protective coatings.
3. *Full delivery capacity*—less friction loss, because there are no obstructions to the flow.
4. *No clogging of valves or small orifices*—because there is no scale in the pipe to break off.
5. *Greater strength at the weld.* The additional rolling which scale free pipe receives, increases its strength at the weld approximately 20 per cent.

We will be glad to send Bulletin No. 7, which explains the advantages of Scale Free Pipe—the pipe that is specially made to resist corrosion.

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

District Sales Offices in The Larger Cities

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Dutch Boy soft paste white-lead is the same strictly pure white-lead that you always get under the Dutch Boy trade-mark—but instead of being a fairly stout paste, it is a soft paste. In other words, it has just enough additional linseed oil worked into it to eliminate the biggest part of the mixing job.

A NEW PASTE WHITE-LEAD

that thins to paint in a jiffy

From paste to paint with Dutch Boy soft paste white-lead is a matter of only a few minutes

PAINT buyers will instantly recognize the labor-saving advantages of this new Dutch Boy product.

Here is pure white-lead ready for almost instant use!

Now mixing costs are cut to nearly nothing. A hundred pounds of soft paste can actually be brought to brushing consistency in six or seven minutes—a rate of a gallon of paint a minute.

Easy to use

Heretofore white-lead has been sold only in the form of a fairly stout paste. The new form of Dutch Boy white-lead is a soft paste. In other words, into it has been ground an additional quantity of linseed oil. The result is a softer paste—one that reduces to paint with remarkable ease, eliminating the biggest part of the mixing-job. Formula: 85% pure white-lead; 15% pure linseed oil—*nothing else*.

All the user does is this: Stirs the paste quickly, *pours* it into a mixing bucket and adds flatting oil if a flat finish is wanted; and drier, linseed oil and turpentine if a gloss finish is desired. That's all there is to it. The pure white-lead paint is now ready for the brush.

Before you order your next consignment of paint materials, try out Dutch Boy soft paste white-lead. This new paste saves time and labor. And it gives a durable, economical white-lead paint — the kind which has been the standard for generations.

How sold

Packed in 100 lb. kegs, and in 50, 25, and 12½ lb. pails. Sold by the pound, 100 pounds bulking about 3½ gallons. Our nearest branch will be pleased to furnish additional information.

NATIONAL LEAD COMPANY

New York, 111 Broadway • Boston, 800 Albany Street • Buffalo, 116 Oak Street Chicago, 900 West 18th Street • Cincinnati, 659 Freeman Avenue • Cleveland, 820 West Superior Avenue • St. Louis, 722 Chestnut Street • San Francisco, 235 Montgomery St. Pittsburgh, National Lead & Oil Co. of Pa., 316 Fourth Avenue • Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut Street

DUTCH BOY *Soft Paste* WHITE-LEAD

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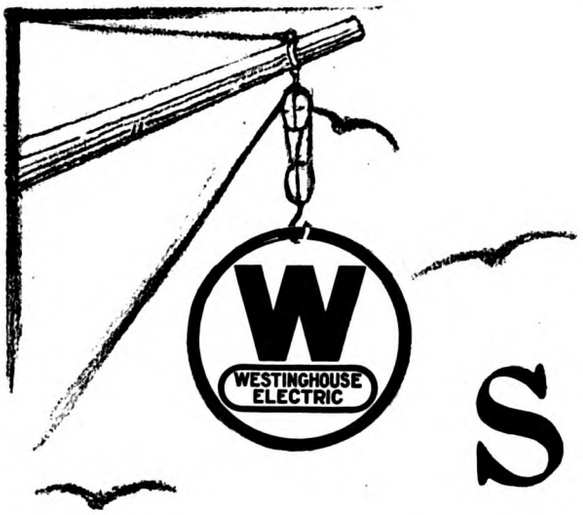


Service

IN perhaps no other branch of industry does service assume such importance as in the marine field. Ships must maintain schedules or heavy losses ensue, and at the same time the service must be absolutely dependable for the protection of life and property at sea.

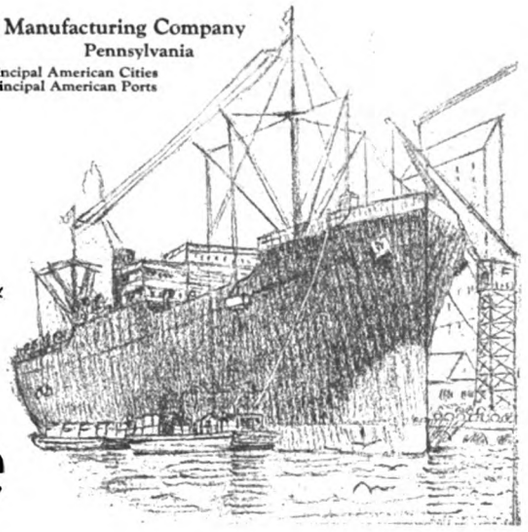
Westinghouse, by virtue of its enormous resources, is particularly fitted to render quick and dependable maintenance and repair service. In the principal ports of the country Westinghouse has excellently equipped and stocked marine service shops, manned by efficient engineers and mechanics, specially trained in marine work.

In addition to this highly specialized marine service department, there is the general Westinghouse Service organization with representatives in all important cities, capable of handling the majority of marine service calls.

Besides casualty service, Westinghouse also provides specialists to superintend installations and instruct engineers in operation and ordinary maintenance.

Inspections of Westinghouse apparatus by these specialists upon arrival of vessels in port is another branch of this extensive service. The importance of this feature lies in the discovery of the necessity for minor adjustments or repairs which obviates serious casualties with their attendant expense and inconvenience.

Westinghouse Electric & Manufacturing Company
East Pittsburgh Pennsylvania
Sales Offices in All Principal American Cities
Service Stations in Principal American Ports



Westinghouse

X93649

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SUN SHIPBUILDING & DRY DOCK CO.

Shipyard and Main Office
Chester, Pa.

Finance Building
Philadelphia

816 Cunard Building
25 Broadway, New York

Seven large American vessels and one pleasure yacht are now equipped with American built ***Sun-Doxford Diesel Engines:***

M.S. Gulf of Venezuela
10,200 tons D. W.

M.S. East Indian
11,600 tons D. W.

M.S. Challenger
11,600 tons D. W.

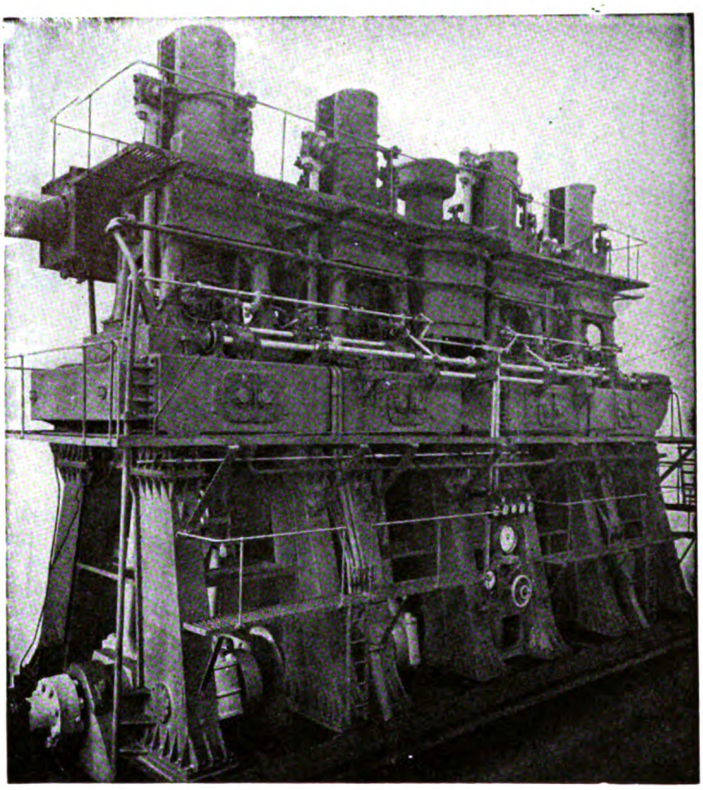
M.S. Bidwell
10,200 tons D. W.

M.S. Miller County
10,200 tons D. W.

M.S. Benson Ford
12,000 tons D. W.

M.S. Henry Ford II
12,000 tons D. W.

M.S. Twin-Screw Yacht Sialia
1500 H. P.

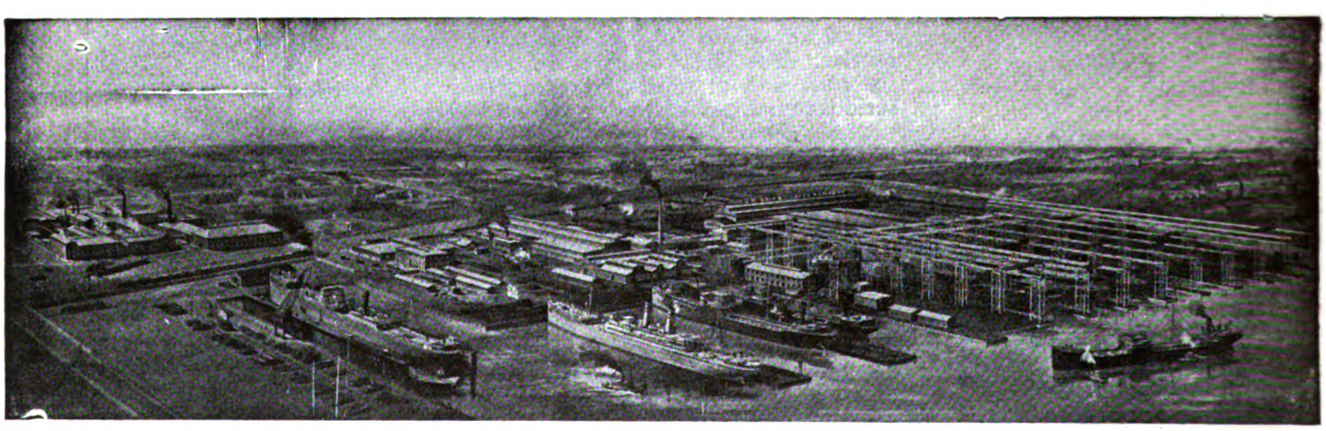


2
Floating Dry Docks
Capacity
11,000 Tons Each

Unlimited Facilities for Ship Repairs

IRON FOUNDERS
Castings up to 70,000 lbs.

Sole Licensees
Sun-Doxford Opposed-Piston Two Cycle Diesel Oil Engine



Shipyard and Dry Docks

Builders of High-Class Single and Twin Screw Passenger and Cargo Steam Vessels and Motor Ships, also Bulk Oil Tankers up to 600 Feet.

SHIP, ENGINE and BOILER BUILDERS, also REPAIRS

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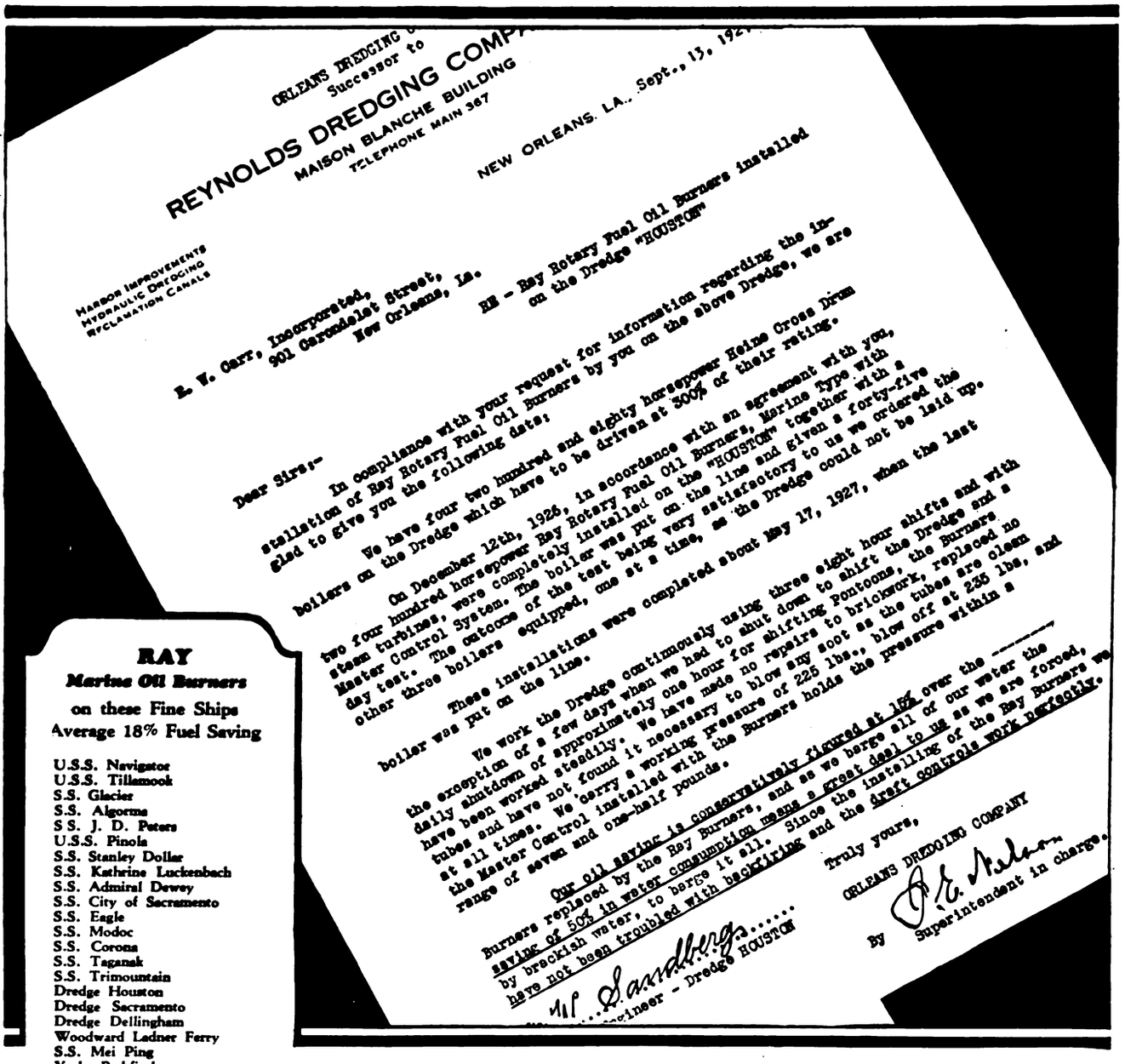
An Open Letter to every Marine Operator who wants to SAVE Fuel and Grief!



ORLEANS DREDGING
Successor to
REYNOLDS DREDGING COMP
MAISON BLANCHE BUILDING
TELEPHONE MAIN 367

NEW ORLEANS, LA., Sept., 13, 192

HARBOR IMPROVEMENTS
HYDRAULIC DREDGING
RECLAMATION CANALS

E. W. Carr, Incorporated,
901 Carondelet Street,
New Orleans, La.

RE - Ray Rotary Fuel Oil Burners installed on the Dredge "HOUSTON"

Dear Sirs:-

In compliance with your request for information regarding the installation of Ray Rotary Fuel Oil Burners by you on the above Dredge, we are glad to give you the following data:

We have four two hundred and eighty horsepower Heine Cross Drum boilers on the Dredge which have to be driven at 300% of their rating.

On December 12th, 1926, in accordance with an agreement with you, two four hundred horsepower Ray Rotary Fuel Oil Burners, Marine Type with steam turbines, were completely installed on the "HOUSTON" together with a Master Control System. The boiler was put on the line and given a forty-five day test. The outcome of the test being very satisfactory to us we ordered the other three boilers equipped, one at a time, as the Dredge could not be laid up.

These installations were completed about May 17, 1927, when the last boiler was put on the line.

We work the Dredge continuously using three eight hour shifts and with the exception of a few days when we had to shut down to shift the Dredge and a daily shutdown of approximately one hour for shifting Pontoons, the Burners have been worked steadily. We have made no repairs to brickwork, replaced no tubes and have not found it necessary to blow any soot as the tubes are clean at all times. We carry a working pressure of 225 lbs., blow off at 235 lbs, and the Master Control installed with the Burners holds the pressure within a range of seven and one-half pounds.

Our oil saving is conservatively figured at 15% over the ------ Burners replaced by the Ray Burners, and as we barge all of our water the saving of 50% in water consumption means a great deal to us as we are forced, by brackish water, to barge it all. Since the installing of the Ray Burners we have not been troubled with backfiring and the draft controls work perfectly.

Truly yours,

ORLEANS DREDGING COMPANY

By ... Superintendent in charge.

... Engineer - Dredge HOUSTON

RAY
Marine Oil Burners
on these Fine Ships
Average 18% Fuel Saving

U.S.S. Navigator
U.S.S. Tillamook
S.S. Glacier
S.S. Algorma
S S. J. D. Peters
U.S.S. Pinola
S.S. Stanley Dollar
S.S. Kathrine Luckenbach
S.S. Admiral Dewey
S.S. City of Sacramento
S.S. Eagle
S.S. Modoc
S.S. Corona
S.S. Taganak
S.S. Trimountain
Dredge Houston
Dredge Sacramento
Dredge Dellingham
Woodward Ledner Ferry
S.S. Mei Ping
Yacht Pathfinder
Yacht Vergena
U.S.A.T. Grant
S.S. J. C. Fitzsimmons

RAY OIL BURNER
TRADE MARK

More than 30,000 Ray Burners in satisfactory use!

NOTE again the underlined portions of the final paragraph—15 per cent fuel saving . . . . 50 percent saving in water consumption . . . . no trouble with backfiring . . . . draft controls work perfectly.
Every RAY MARINE TYPE ROTARY OIL BURNER is delivering this same kind of remarkable service. Perfect combustion through the exclusive RAY angular vane nozzle principle is one chief reason. RAY equipment is installed and guaranteed on a fuel saving basis. Pays for itself in six months to one year's time.

Full Information on Request

W. S. RAY MANUFACTURING COMPANY, Inc.
Established 1872
Plant: 300 Bosworth Street—*Display Room:* 170 Sutter St.—San Francisco, Calif., U.S.A.
Distributors and Service in all Principal Cities.

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Diesel-electric tugs do quick work, get more accomplished and produce bigger profits than equally powerful tugs of any other type.

TOWING jobs are charged according to the work done, so there is certainly the most profit in finishing them quickly. Doing 15 or 20 per cent more work, finishing more jobs per day, and at lower cost, are therefore highly desirable.

McIntosh & Seymour Diesel-electric power will do even more as the Diesel advantages can be utilized to the fullest extent. The engine is flexible, easily handled and dependable under any load, speed, tide, current and weather condition, and is always ready for an instant start. The fuel consumption is but half to one-fifth that in a steam tug, and the economy is almost as high at fractional loads as when the tug is under heavy tow.

Due to this extreme fuel economy under load, absence of standby losses, and the smaller volume of oil fuel, each fueling will carry the tug over more miles and greater operating radius. Fueling also takes less time with oil, fewer fuelings are necessary, and the frequent stops of a steam tug for water are eliminated. Together in a month's time, these advantages release many hours for additional useful work.

To the much lower fuel bill and virtual elimination of the water bill should be added also the savings of less attendance and lower maintenance. The attendant has no duty that compares with the physical effort of boiler cleaning and once accustomed to Diesel operation never wishes to go back to steam.

The application of an electric motor for turning the propeller also has special advantage in towing, in that the electric motor can exert *full power effort at all speeds* within its range. The torque can be increased as the speed is decreased, and at the low and intermediate speeds, far greater towing effort can be produced than is obtainable from any other form of propulsion. When a heavy tow checks the propeller speed of a Diesel-electric towboat, greater propelling power keeps the boat going faster than with steam power. The heavier the tow the clearer the superiority of the Diesel-electric arrangement. This characteristic together with the full pilot house control, not practical with steam, is also the means of quicker, more positive and safer backing and maneuvering. The superiority in these features is strikingly demonstrated in the quick checking of the way when heavily loaded floats are aside the towboat, and in a tough corner when seconds count, the quicker operability prevents or lessens collision damage.

Quite independent of previously mentioned advantages is the opportunity which McIntosh & Seymour Diesel-electric power affords for still greater traveling speed and power by modifying hull and propeller

design to take advantage of the larger propeller size and the slower propeller speed that promote propeller efficiency. Doing this involves little increase in cost as only the motor is affected. Where greater draft is practical, and the hull form is modified for a slower propeller, the propeller efficiency could be increased to add perhaps a third of a mile per hour to the towing speed. Such a gain added to a towing speed of say 6 miles per hour would give a railroad tug a gain of about one hour per day, and under the usual careful management that hour would be fully used.

In such operations as moving coal, sand and gravel scows where 3 miles per hour, and heavy log rafts where 2 miles per hour, are good towing speeds, the opportunity for gain in propeller efficiency is even greater.

In connection with such special design for improved propeller efficiency, it should be remembered that all the improvement is retained throughout all the operations of the boat during her entire life, and is clear extra profit as there is no increase in fuel or labor expense.

Modification of hull and propeller design for a larger slower moving propeller offers the opportunity for still greater power and speed from Diesel-electric drive, and this improvement, retained for life, at no extra fuel or labor expense, is clear extra profit.

If you have towing problems it would be to your advantage to discuss these matters further with our Engineers.

BY INVITATION MEMBER OF

NEW YORK, U.S.A.

McIntosh & Seymour Corporation

Main Offices and Works: Auburn, N. Y.

New York City, 149 Broadway
Jacksonville, Fla., 412 Bisbee Bldg.
Houston, Texas, 219 Humble Bldg.
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McINTOSH & SEYMOUR MOTOR SHIPS

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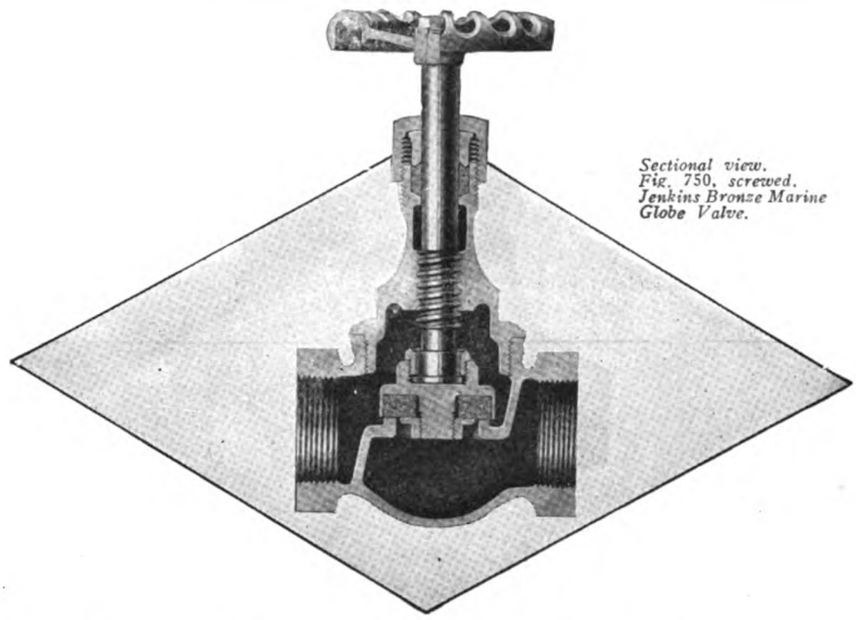
Fig. 758, screwed, Jenkins Bronze Marine Angle Check Valve.

Fig. 756, screwed, Jenkins Bronze Marine Horizontal Check Valve.

Fig. 752, screwed, Jenkins Bronze Marine Angle Valve.

Fig. 771, flanged, Jenkins Bronze Marine Angle Valve, with bolted bonnet.

Fig. 769, flanged, Jenkins Bronze Marine Globe Valve, with bolted bonnet.



Sectional view. Fig. 750, screwed, Jenkins Bronze Marine Globe Valve.

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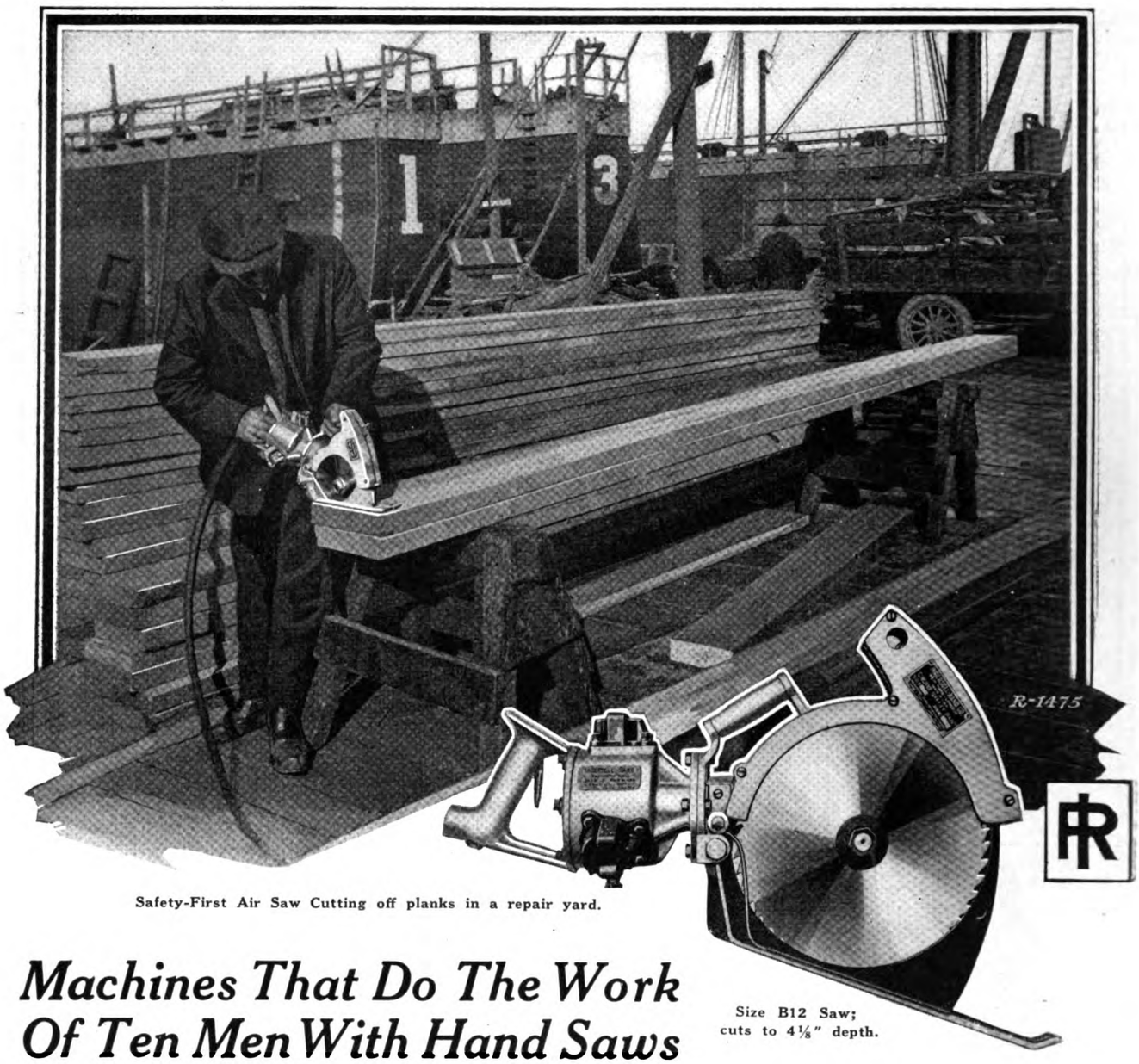

Safety-First Air Saw Cutting off planks in a repair yard.

Size B12 Saw; cuts to 4⅛" depth.

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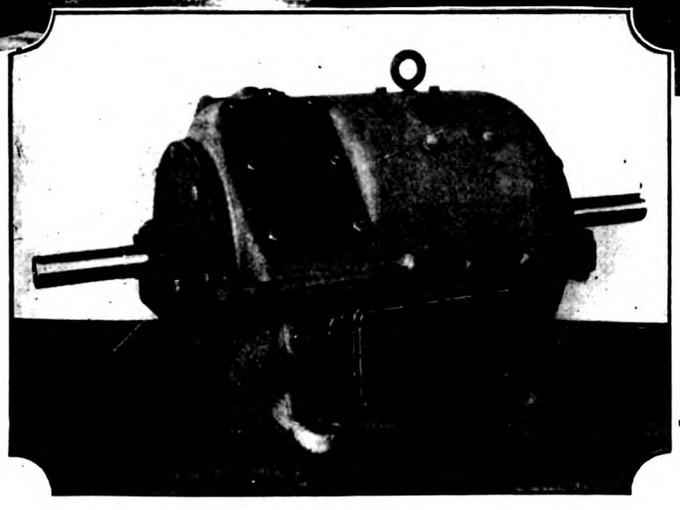

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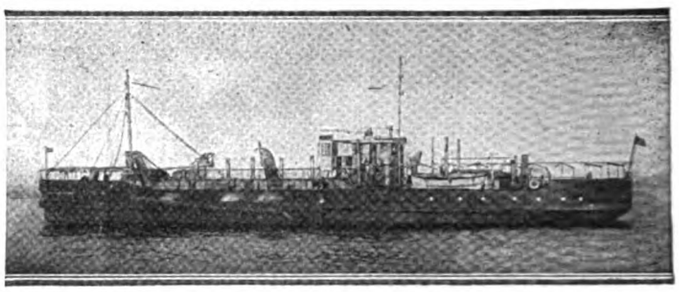

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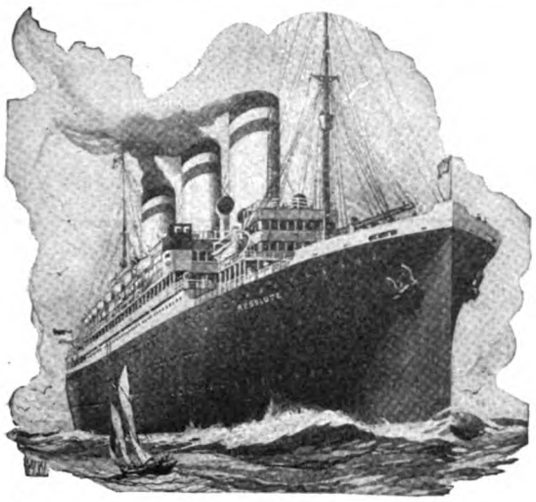

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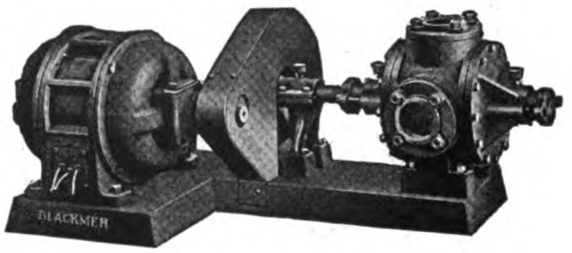

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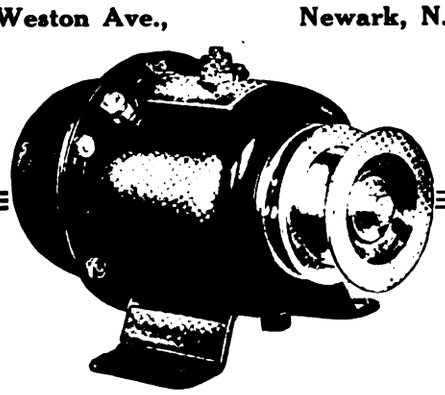

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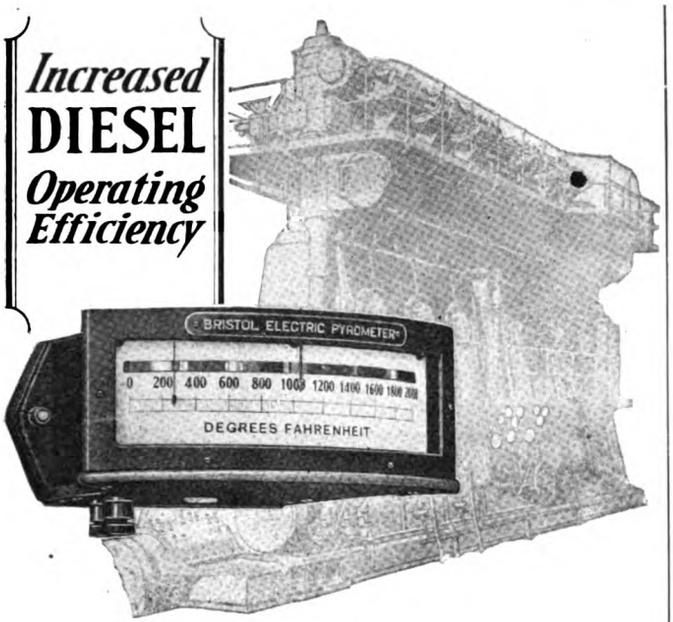

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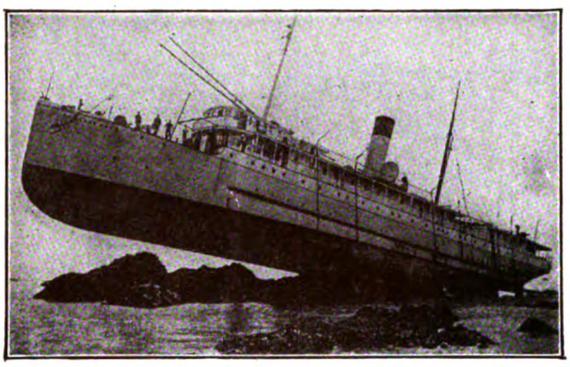

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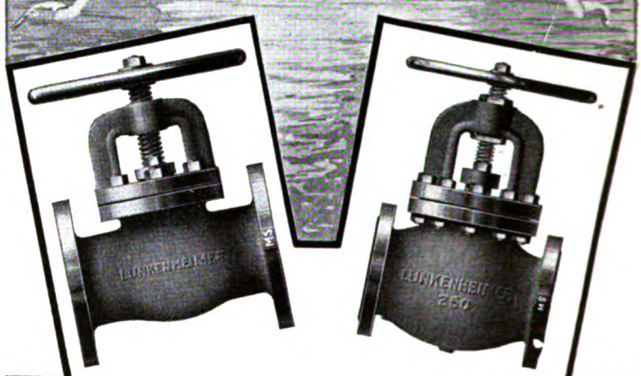

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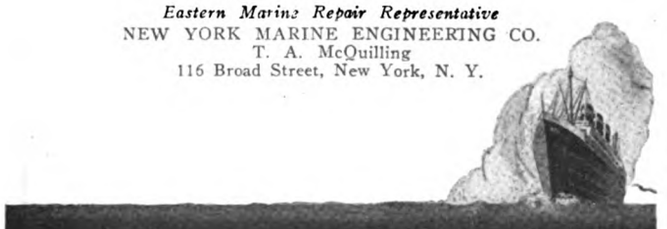
LAMINUM possesses all the strength and solidity of the solid shim, with many additional advantages.

It PEELS. This means a great saving in labor and time and makes quick adjustments possible. No job is too big for LAMINUM, and none too small. Leading engineers use LAMINUM because it "keys up" efficiently, preserves oil film and aids in attaining better bearing performance.

Laminum comes in sheets 6" x 36". Shims made to order. Send us an old shim or templet so that we can duplicate specifications. Your shim will be returned with order. Write for sample of Laminum and complete details.

LAMINATED SHIM COMPANY
Incorporated
237 14th Street, Long Island City, N. Y.
St. Louis: Mazura Mfg. Co.
Detroit: 2017 Dime Bank Bldg.
Eastern Marine Repair Representative
NEW YORK MARINE ENGINEERING CO.
T. A. McQuilling
116 Broad Street, New York, N. Y.



LAMINUM
Wherever There's a Split Bearing

MARINE SERVICE

demands a valve reseating machine that will "stand the gaff."

The rigid construction of the

DEXTER VALVE RESEATING MACHINE

accounts for the adoption of this machine by the marine engineers.

Small machine attached to valve.

It is built to insure ease of operation, reliability, efficiency and durability. The result of over thirty-five years specializing in tools for repairing valves.

We would be pleased to send you our Catalog No. 23 describing these machines.

THE LEAVITT MACHINE CO.
13 East River Street, Orange, Mass., U. S. A.
CANADIAN AGENCY:
Darling Bros., Ltd., 120 Prince Street, Montreal.
BRITISH AGENCY:
Cromil & Piercy, Ltd.
E. Floor, Milburn House, Newcastle-on-Tyne.

DEXTER
VALVE RESEATING
MACHINES

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Then only, far under in the depths of her hold,
Some gleam of its wonder man's eye may behold.
—SWINBOURNE.

EACH beam, each well fitted timber, each sturdy rib and plank strong enough to stand the wildest gale,—and she's tight if properly caulked.

The experienced sailor knows the value of tight seams—no one need tell him that—but thousands of ships on the seven seas assure him that his seams will be *tightest* when caulked with

STRATFORD OAKUM

For almost a century, Stratford Oakum has caulked the seams of the finest vessels that sail the seas.

Be sure you get genuine Stratford Oakum. There is no other "just as good."

GEORGE STRATFORD OAKUM CO.
Jersey City, New Jersey
Also manufacturers of Cotton Wiping Waste

2

For
Barges
and
Lighters

JEFFERY'S MARINE GLUE

Costs Less Than Pitch

Keep Down Upkeep

Economical and efficient because it is long-lasting and low in price. One pound of Jeffrey's No. 2, First Quality Ship Marine Glue will pay from 20 to 25 feet of deck seams and *preserve* the decks at less actual cost than pitch.

Save 75 % of Labor Cost

Labor is the big item in paying decks. When pitch is used, decks must be repayed three or four times during the life of one application of Marine Glue. Thus, Jeffrey's Marine Glue saves 75% of your labor costs—the biggest item of expense. This far more than offsets the slightly lower first cost of pitch.

Sold by Marine Supply Houses
14-112-lb. Boxes or Tins — 336-lb. Drums.

Put Problems Up to Us

L.W. Ferdinand & Co.
152 Kneeland Street, Boston, Mass.

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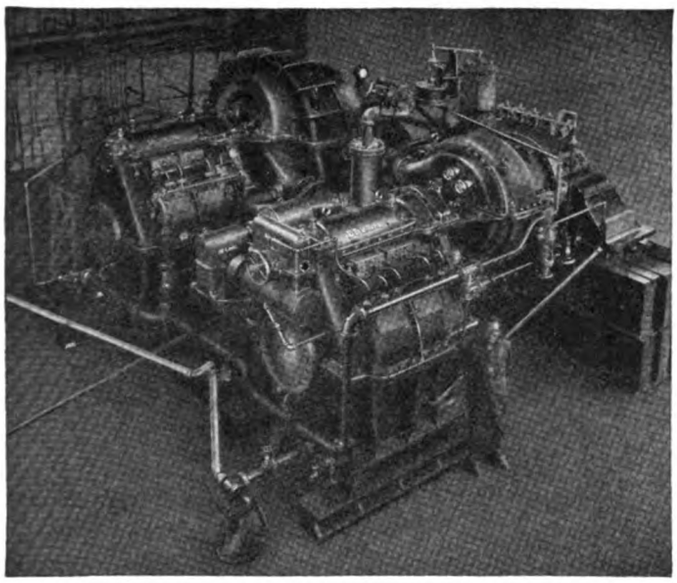

A Remarkable Advance *In Marine Engineering*

BECAUSE of the high steam pressure and superheat, the high vacuum to be provided and the efficient type of turbine and gears used, it is expected that the fuel consumption of the new freight and passenger vessel "Dixie" of the Southern Pacific Line will be exceedingly low.

The De Laval Compound Turbine will operate on steam at 350 lbs. per sq. in. gage at the throttle and 140° F. superheat, and is rated at 7,100 HP. normal, with an overload capacity of 10%. The propeller is driven at 90 RPM. through De Laval Double Reduction Gears. The accompanying photograph shows the high and low pressure turbines and the high speed gears only, the low speed gears being erected separately.

The turning gear consists of an electric motor and a double De Laval Worm Reduction Gear, the worm wheel of the second gear being arranged for connection to the high pressure turbine pinion. This arrangement replaces the usual large and cumbersome turning gear attached to the propeller shaft.

The Dixie was built by the Federal Ship Building and Dry Dock Co. and is the third Southern Pacific vessel to be equipped with De Laval Gears, the other two being the "El Coston" (ex "Bienville") and "El Oceano," both of which have given remarkably success ful and satisfactory results in service.

Estimates and guarantees regarding De Laval Propelling Equipment will be supplied upon receipt of specifications.

De Laval
Steam Turbine Company
Trenton, New Jersey

Local Offices: Atlanta, Boston, Charlotte, Chicago, Cleveland, Denver, Duluth, Havana, Helena, Honolulu, Houston, Indianapolis, Kansas City, Los Angeles, Montreal, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., St. Paul, Salt Lake City, San Francisco, Seattle, Spokane, Toronto, Vancouver.

685

THE IMPROVED MARINE GENERATING SET

Str. H. S. Wilkinson, Great Lakes Steamship Co., Cleveland, ENGBERG Equipped

Dependable
Marine Generating Sets 1 to 60 K.W.

IF YOU will make a thorough comparison, you will readily understand why ENGBERG Generating Sets are insisted upon in first-class installations.

The answer lies in the thorough design and construction — the direct result of more than thirty years' careful investigation into practical requirements and meeting these in the most satisfactory way.

A talk with any ENGBERG Owner or Operator will very definitely convince you that ENGBERG Generating Sets give superior performance. Consistent repeat orders from leading Corporations prove it.

ENGBERG'S
ELECTRIC & MECHANICAL WORKS
622 Vine St., St. Joseph, Mich.
U. S. A.

ENGBERG

ENGINES GENERATING SETS — GENERATORS SWITCHBOARDS MOTORS

THE RESULT OF THIRTY YEARS MARINE EXPERIENCE

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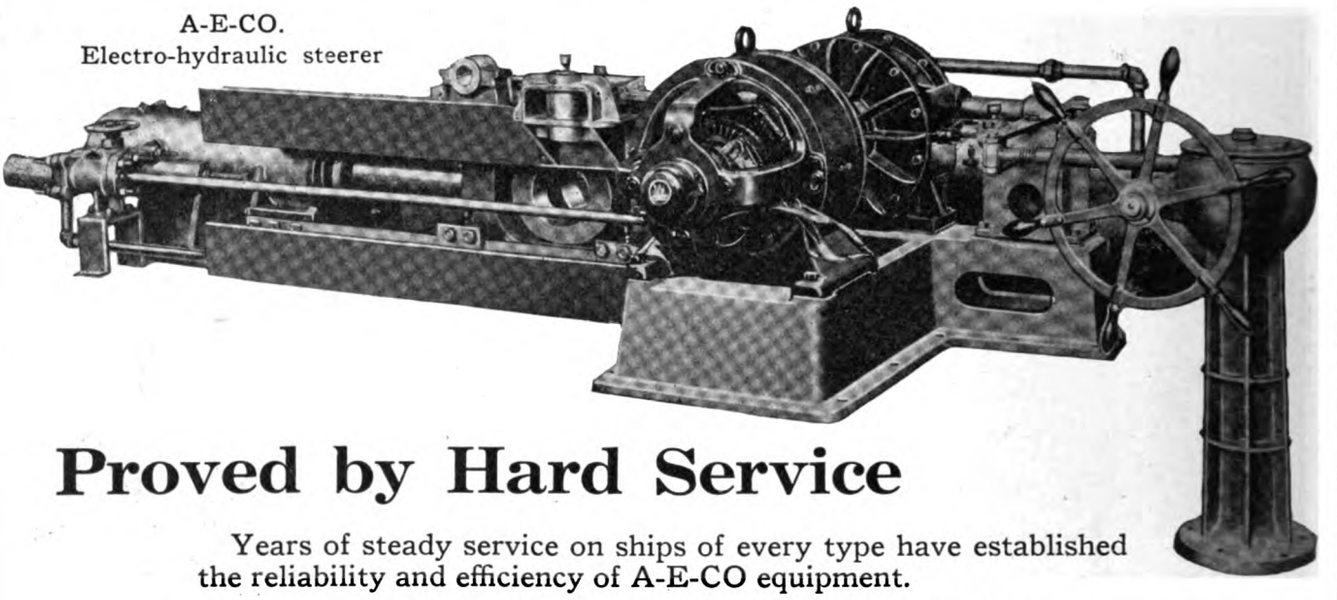
A-E-CO.
Electro-hydraulic steerer



Proved by Hard Service

Years of steady service on ships of every type have established the reliability and efficiency of A-E-CO equipment.

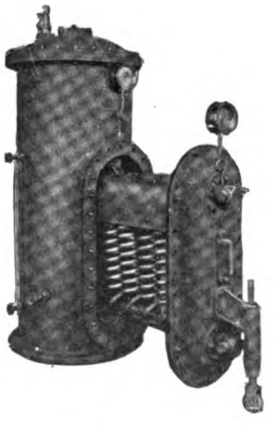
Our line includes every type of windlasses, winches, steerers, capstans, telemotors, gypsies, towing machines, etc.

Write for information

AMERICAN ENGINEERING COMPANY

Aramingo and Cumberland Sts., Philadelphia, Pa.

Get rid of scale *before* it enters the boilers



1/16 inch of scale in the boiler tubes increases the coal consumption 10 to 16 per cent. To clean out this scale requires wasteful boiler blow-downs and costly periodic shutdowns for tube cleaning.

But you need not tolerate scale as a necessary evil. No matter how bad your source of boiler feed make-up may be, a

G-R Evaporator

Scale-Shedding

will put an end to your boiler scale troubles by distilling the raw water at low cost and *without the use of chemicals.*

If you are interested in the possibility of reducing your fuel bills from 2 to 8 per cent, enabling your boilers to carry 300 per cent overload without danger of priming, reducing the maintenance cost and increasing the life of your boilers, *write for our free book on boiler feed purification.*

THE GRISCOM-RUSSELL COMPANY

285 MADISON AVENUE, NEW YORK

MARINE OFFICES

Philadelphia St. Louis Los Angeles Boston Chicago
New Orleans San Francisco Seattle

For CANADA,
Riley Engineering & Supply Company, Ltd., Toronto

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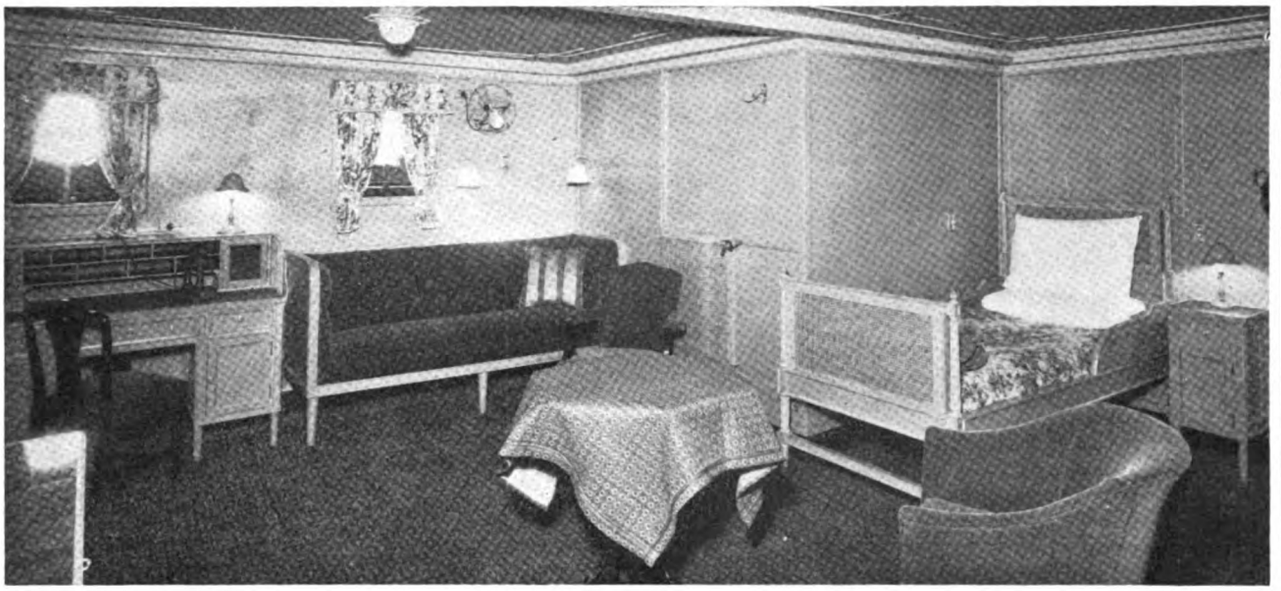

THE above bed room of this suite is another example of the conversion of Ritz-Carlton Galleys and Pantries on the Leviathan by the Rex Cabinet and Linoleum Company.
Specialists on ship repairs, betterments and alterations. Cabinet Makers and Joiners.
Estimates on short notice. Telephone Union 9437.

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591-593 Summit Ave., Cor. 30th St., Union City, N. J.

Some recent YORK JOBS!

S. S. "Atlantida"

S. S. "Amapola" Standard Fruit & S. S. Co.

U. S. S. "Seneca"

U. S. Lighthouse Tender "Willow"

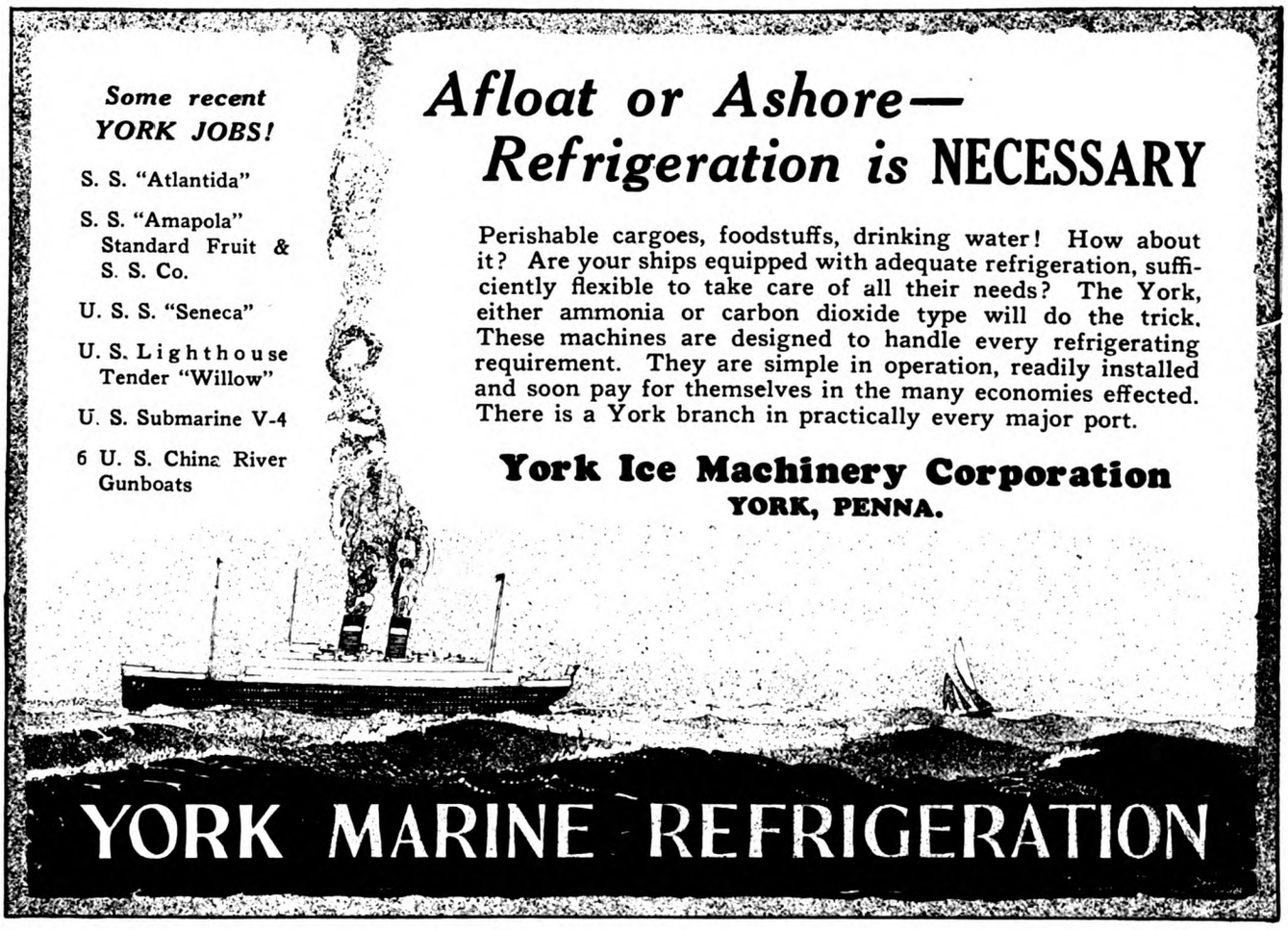
U. S. Submarine V-4

6 U. S. China River Gunboats

Afloat or Ashore— Refrigeration is NECESSARY

Perishable cargoes, foodstuffs, drinking water! How about it? Are your ships equipped with adequate refrigeration, sufficiently flexible to take care of all their needs? The York, either ammonia or carbon dioxide type will do the trick. These machines are designed to handle every refrigerating requirement. They are simple in operation, readily installed and soon pay for themselves in the many economies effected. There is a York branch in practically every major port.

York Ice Machinery Corporation
YORK, PENNA.



YORK MARINE REFRIGERATION

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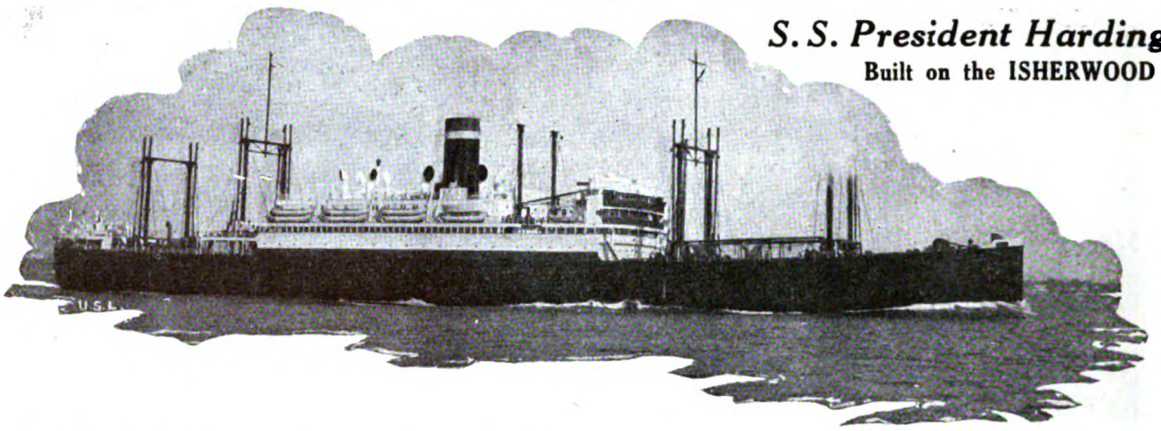


S. S. President Harding
Built on the ISHERWOOD System

Shipowners, Shipbuilders, Naval Architects and Engineers

WHEN designing passenger, freight or other type of vessels, to insure the maximum dead-weight capacity with increased strength, together with reduced cost of maintenance, reduction in vibration, and improved ventilation, should give the "Isherwood" system or the "Isherwood Combination" system consideration.

For oil-tank ship construction The "BRACKETLESS-SYSTEM" eliminates bulkhead brackets—eliminates bulkhead leakage—greatly simplifies construction—greatly reduces cost of upkeep and cost of damage repairs. Substantially increases the longitudinal strength beyond the well-tried "Isherwood system."

For further particulars apply to

17 BATTERY PLACE
NEW YORK

SIR JOSEPH W. ISHERWOOD, Bt.

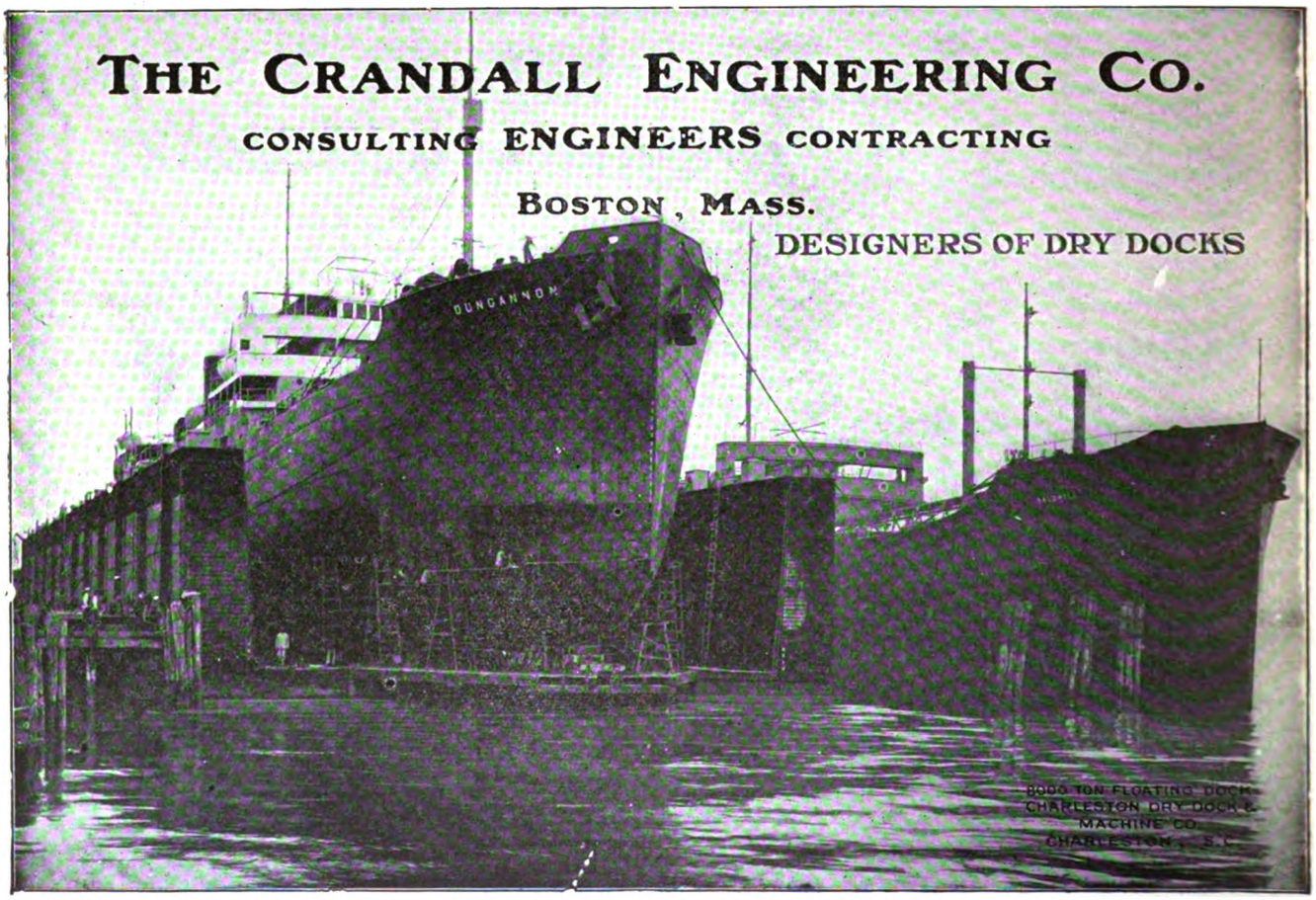
4 LLOYDS AVENUE
LONDON, E. C. 3.

THE CRANDALL ENGINEERING CO.

CONSULTING ENGINEERS CONTRACTING

BOSTON, MASS.

DESIGNERS OF DRY DOCKS



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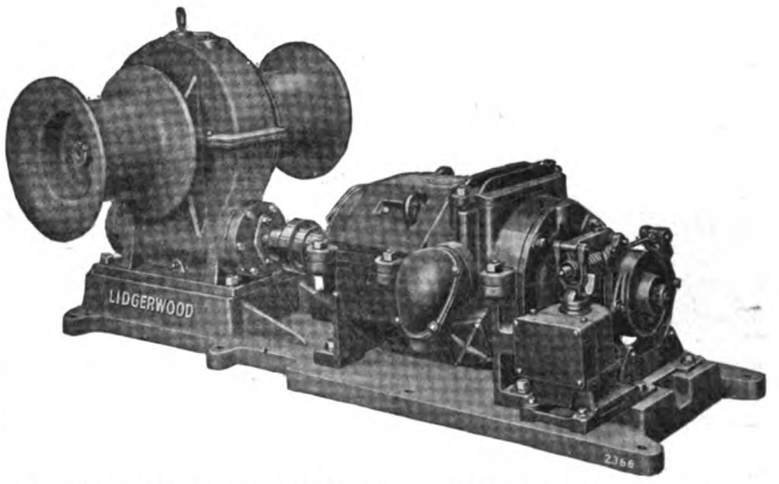
ROBINSON CRUSOE: "Now Friday when we get this SHIPMATE set up you'll see how real men live.

It was a Godsend that we were able to get it off the vessel."

SHIPMATES
are made only by

THE STAMFORD FOUNDRY COMPANY

Established 1830 STAMFORD, CONN.



Eight of these boat winches built for the Clyde Line steamers "IROQUOIS" and "SHAWNEE" now building at Newport News S. B. & D. D. Co. Duty 3000 lbs. at 120 F.P.M.

Steam and Electric Ship Winches, Dock Winches, Steering Engines, Automatic Towing Engines

LIDGERWOOD

ELECTRIC BOAT HOIST

Single reduction worm gearing running in oil bath—enclosed in oil tight cast iron housing.

Wormshaft driven from motor thru marine type flexible coupling. Push button, or full rheostatic control.

Regularly built for duties of 1000 to 5000 lbs.—speeds of 90 to 150 F.P.M.

SAFE—EFFICIENT—COMPACT
NOISELESS—CLEAN

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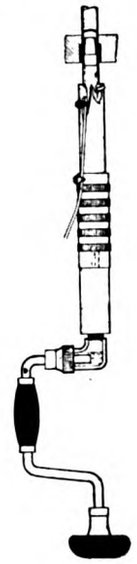
How's This For Service!



ON November 5th at 2 A. M. just three days and fifteen hours after we started to open the condenser, we were given a test. Not a single leak other than two tubes which had not been packed. When this was done, not a leak was visible under a 30 ft. head. Here are the details:

S/S Independence Hall. Main condenser of 2600 tubes. Work commenced on Nov. 1st at 11 A. M.

Removed heads, ferrules, tubes and packing. One tube sheet removed and condenser cleaned. All tubes cut on one end to correct length. Retubed, repacked and re-ferruled. Retaped sheet where necessary. Ready for test at 12 midnight but not applied until 2 A. M. Saturday morning, Nov. 5th. This is a record worthy of your attention and consideration.

We would appreciate the opportunity to quote you on condenser work.

BLAIN & COMPANY

(Incorporated)

Specializing in Steam Condenser Work

119-121 Sixth St. **West New York, N. J.**

Telephone Palisade 6327 at all hours

Announcing The New Cleco Chipper

THE LIGHTEST FASTEST AND HARDEST HITTING HAMMER MADE

The Hammer That Pleases Everybody

Style "L"

STYLE A.K. CLECO CHIPPER

Is the same in its construction as the Style "L," shown above, differing only in the Handle Locking device which is a "Ratchet" Lock instead of a Clamp-Bolt and Nut. Either style hammer furnished on order from stock.

THE NEW CLECO CHIPPER

Is a "High Speed" Hammer designed for high speed production demanded in present day methods of manufacture.

The Cleco has no "Vibration" in operation; it is Easy to hold and Easy to control.

Piece-workers prefer the Cleco, as it shows a gain of 33 1-3% in Output.

The Cleco is a "Rugged" tool, Low in "Upkeep" and "High" in Quality and Performance.

A free trial is offered to interested users — No obligation incurred.

Illustrated Bulletin No. 727 mailed on request

THE CLEVELAND PNEUMATIC TOOL CO.

3734 EAST 78th STREET, **CLEVELAND, OHIO, U. S. A.**

Agts. for British Isls., John MacDonald & Co. (Pneumatic Tools), Ltd., Glasgow, Scotland

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Waterbury Ship's Bell and Motor Boat Clocks

Ensign
Height 6 Inches

Price $22.50 *Bronze finish $3.50 extra*

Ship's Bell No. 10
Measures 6¼ Inches
Across the Back

Price $37.50 *Bronze finish $3.50 extra*

Your Christmas Problem Solved!

REMEMBER your Captain, Chief Engineer, Customer or friend at Christmas time with a WATERBURY Marine clock. It will be appreciated more than anything else, and be a reminder of good friendship for many years to come.

Styles of the most exacting type, suitable for the Boat, Home or Office Desk.

SHIP'S BELL clocks are fitted with 8-day JEWELED movements, self-adjusting strike. Cases are of heavy cast Brass, polished or Bronze finish. 4½ inch Silvered Metal Dial.

MOTORBOAT and ENSIGN clocks are made of the same materials and finish as the larger models, and are fitted with 8-day JEWELED time, non-striking movements. Wound and set by turning the Pilot Wheel. 2½ inch Silvered Metal Dial.

Ask your dealer, or, write to us for illustrated booklet.

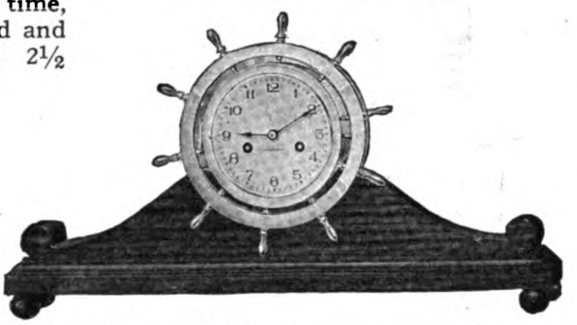
WATERBURY CLOCK CO.
NEW YORK
30 Irving Place

CHICAGO
215 W. Randolph St.

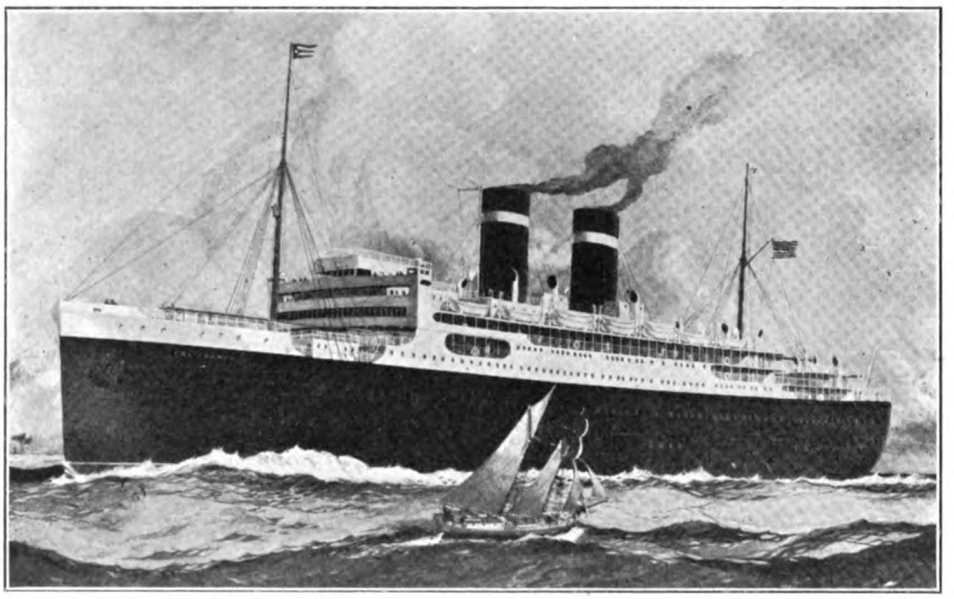
Geo. H. Eberhard,
290 First St., San Francisco, Cal.

Motor Boat No. 2
Measures 3¾ Inches
Across Back

Price $16.50
Bronze finish $3.50 extra



Ship's Bell No. 11. Height 10 Inches, Width 18 Inches
Price $48.00 *Bronze finish $3.50 extra*



New S. S. California

GOLD AND SILVER PLATED JOINER HARDWARE

by

TOPPING BROTHERS NEW YORK CITY

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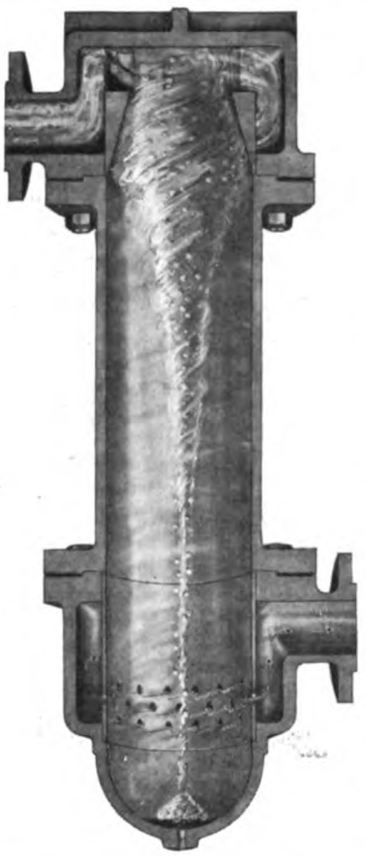

Over 750,000 Horsepower in Service—*Now*

THE HICKMAN AIR SEPARATOR

will likewise protect your boiler or condensing equipment and piping from corrosion and erosion by removing the entrained gases.

The first cost is surprisingly low—easy to install—maintenance nil—no moving or wearing parts—certainly worth investigating.

Let us tell you more about this much needed device. Send us the details of your most troublesome vessel—our engineers will gladly give you recommendations and estimates—without obligation.

SOME REPRESENTATIVE USERS:

Matson Navigation Co., U. S. Shipping Board, Dollar Steamship Lines, Los Angeles Steamship Lines, Standard Oil Co., Key System Transit Co., Shell Company of California, Ore Steamship Co., Bradley Transportation Co., American-Cuban S.S. Co., U. S. War Department.

Bulletin M-3—just off the press—tells the complete story. We will gladly mail it to you upon request. Every man interested in this live subject will find valuable data in this new bulletin.

WESTERN ENGINEERING COMPANY
215 Market Street San Francisco, U. S. A.

Babcock & Wilcox

WATER TUBE MARINE BOILERS AND SUPERHEATERS

FOR NAVAL AND MERCHANT VESSELS OF ALL CLASSES

Installations total over Six Million Horsepower.

MECHANICAL ATOMIZING OIL BURNERS

FLEXIBLE RELIABLE EFFICIENT

Marine Installations Total Over Seven Thousand Burners.

CONCENTRATION APPARATUS

FOR MEASURING SURFACE CONDENSER LEAKAGE, BOILER WATER SALINITY AND OTHER USES.

OIL SEPARATORS

FOR AUTOMATICALLY REMOVING OIL FROM BOILER FEED WATER.

THE BABCOCK & WILCOX CO.

Marine Department

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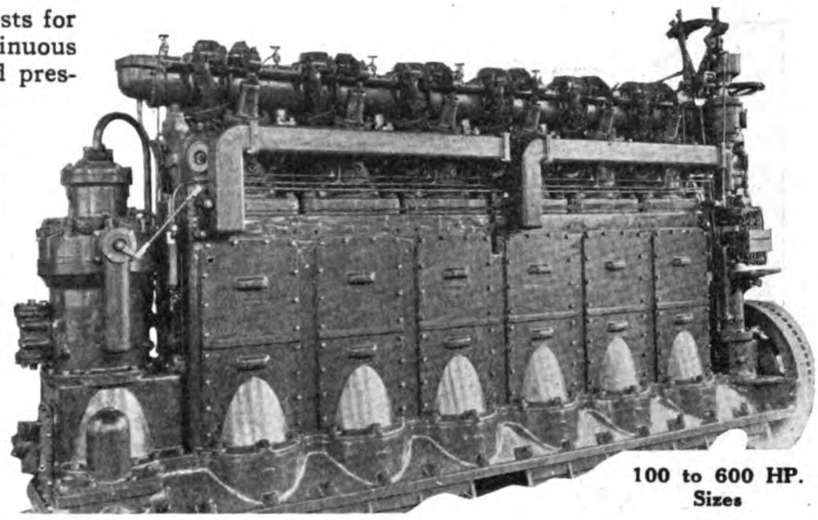
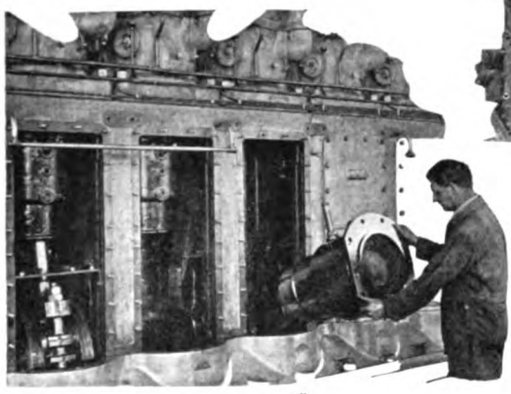
LOMBARD-DIESELS

THESE engines have passed all tests for low fuel oil consumption, continuous full load running, moderate heat and pressure stresses, and reserve power. Guarantees have been equalled or bettered in every instance. Installations in marine electric and direct drive vessels and land power plants have been uniformly successful.

Such results are the natural accompaniment of the excellent design, especially selected materials, and careful work.

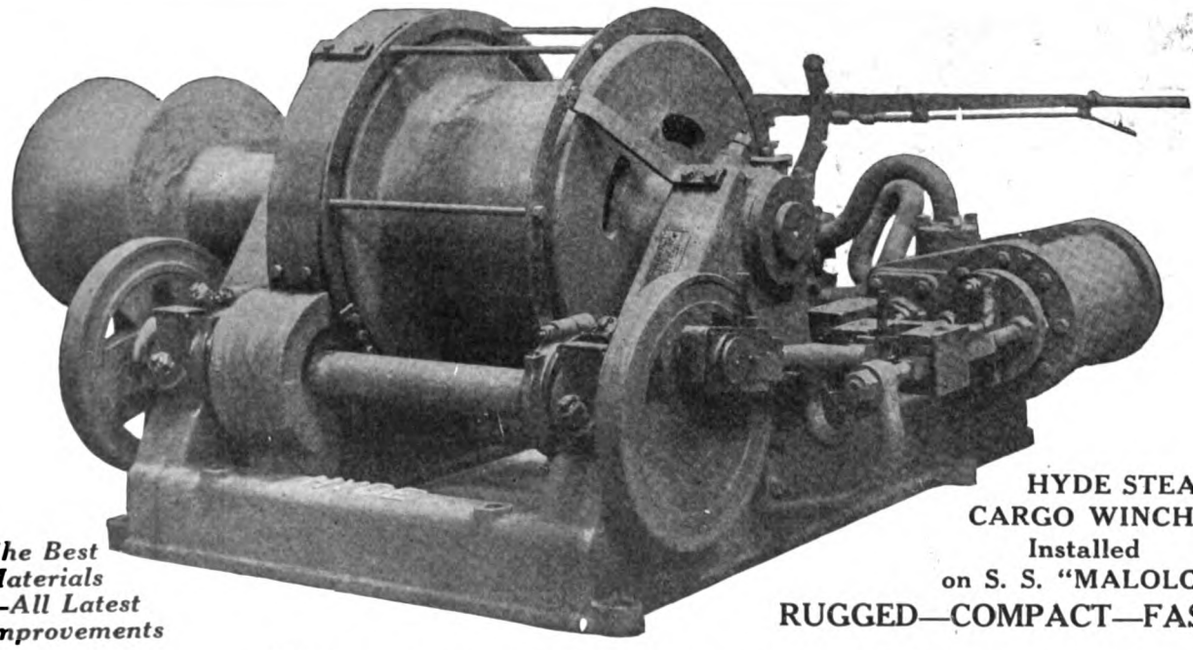


100 to 600 HP. Sizes



Lombard users are sure of satisfying performance and, moreover, gain the added value of real time-and-expense-saving accessibility. Write for full information on these "extra-value" engines.

THE LOMBARD GOVERNOR CO.
ASHLAND, MASS.



The Best Materials —All Latest Improvements

HYDE STEAM CARGO WINCH Installed on S. S. "MALOLO."
RUGGED—COMPACT—FAST

Why not replace your old winches with up-to-date machines?

A few installations: Malika, Bienville, El Oceana, Finland, Kroonland, Katrina, Luckenbach, Walter Luckenbach, Marne, Aisne, Anaconda, Eastern Dawn, Eastern Glade, Imoko, Volunteer, Independence, J. L. Luckenbach, Julia Luckenbach, Edward Luckenbach, F. J. Luckenbach.

Steering Gears, Windlasses, Capstans, Bronze Propellers

HYDE WINDLASS COMPANY, BATH, ME.

New York Office, 172 Chambers Street

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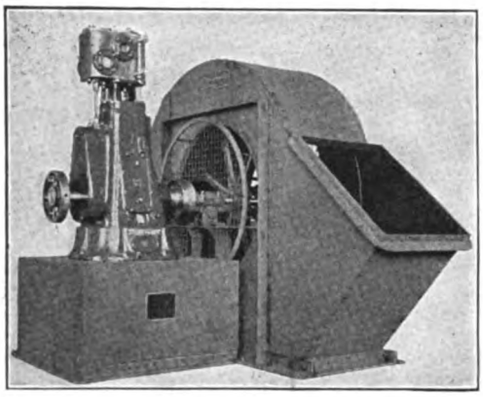
Sturtevant Steel Plate Fans
Ideal for
Marine Forced Draft



THE ideal performance of Sturtevant Steel Plate Forced Draft Fans is the outcome of sound engineering principles of design and finest manufacturing methods of construction.

They are designed for slow speeds and therefore have comparatively large diameter wheels, making it possible to obtain the necessary top speed to develop the desired pressure without excessive rotative speeds. Because of the fan wheel construction, air velocities through the fan are low and uniform. Low rotative speed and low air velocity combined results in practically noiseless and vibrationless operation under normal conditions.

The particular type of Sturtevant Steel Plate Forced Draft Fan shown at the left is built especially for Marine duty and may be either engine or turbine driven. Let us send you further data on this fan.

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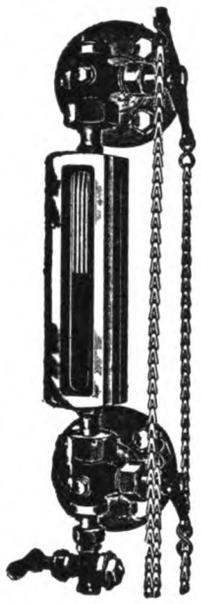

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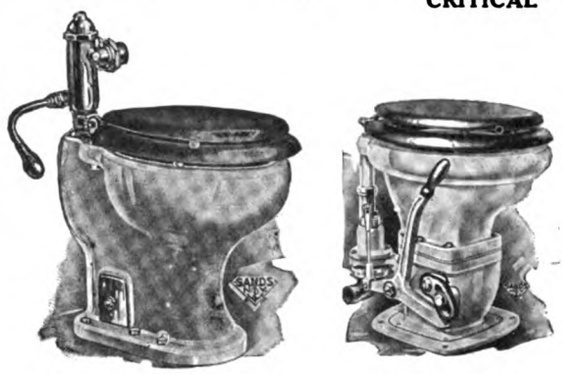

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Plate F-1190—The "Colorado" syphon jet water closet; vitro-adamant pedestal bowl. Fitted with non-return valve at outlet; lever handle "Utilis" flush valve. Metal parts N. P. brass; oak seat and cover $82.75

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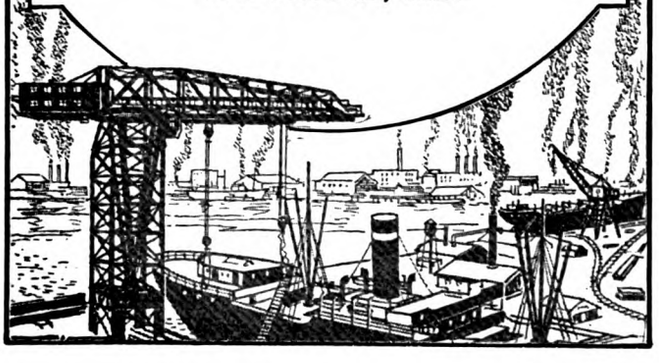

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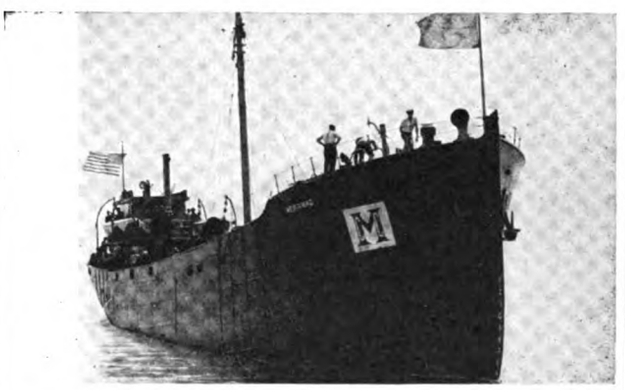

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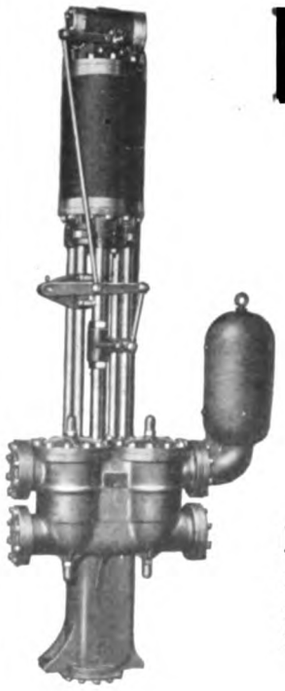

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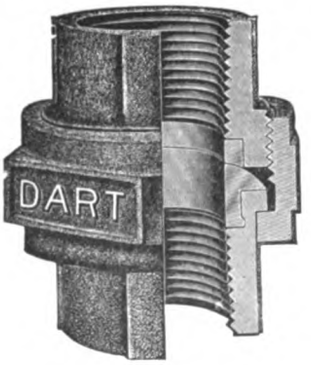

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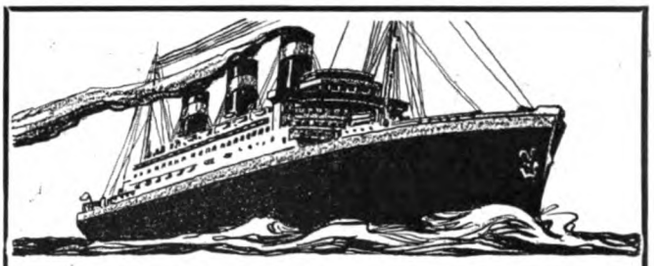

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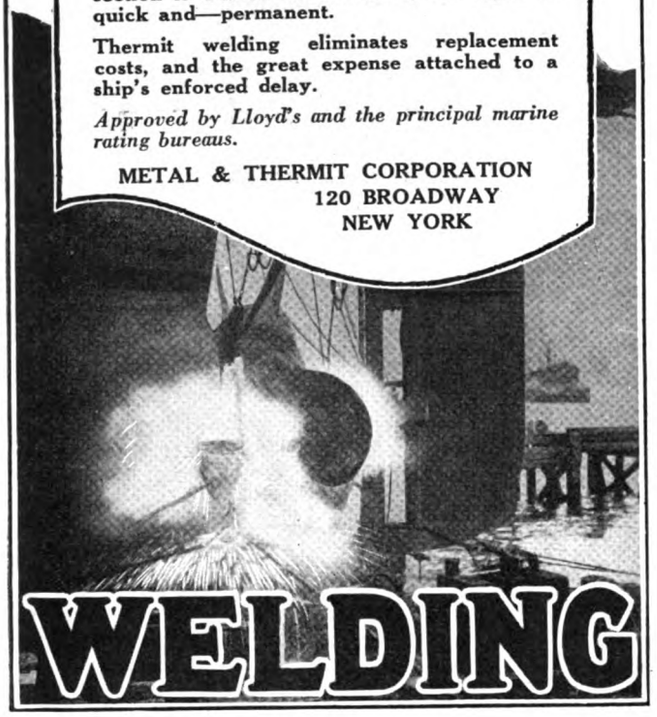

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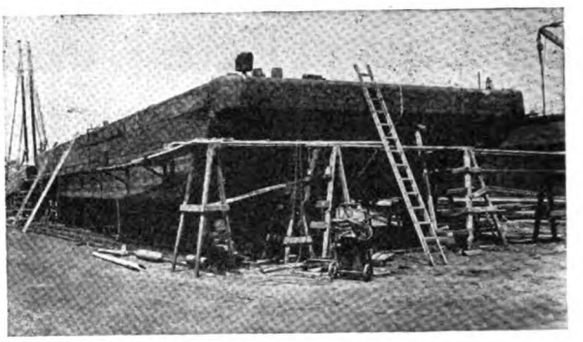

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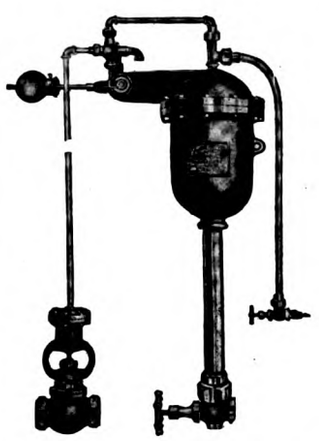

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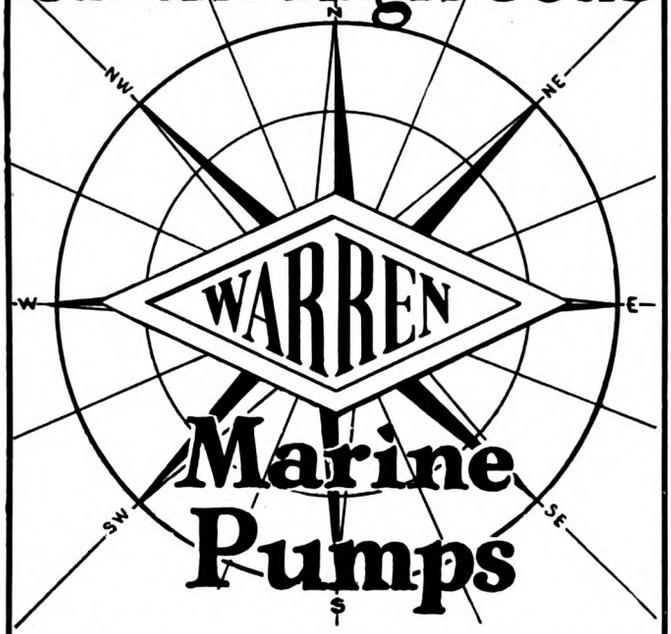

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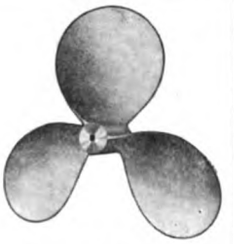

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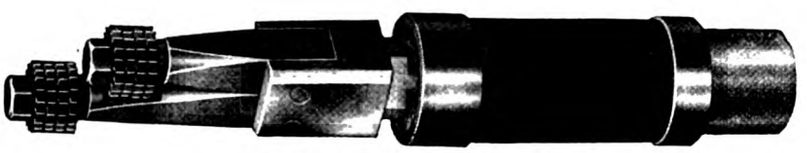

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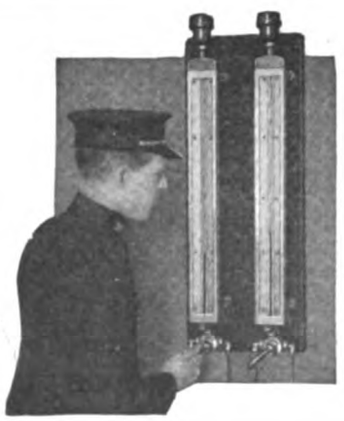

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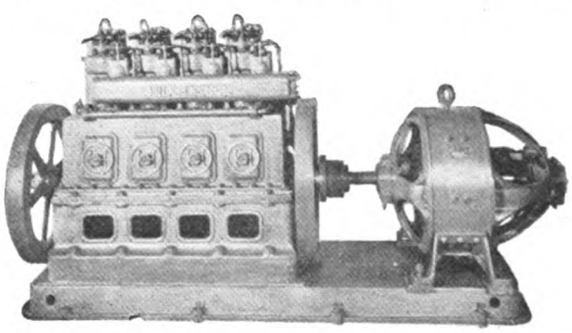

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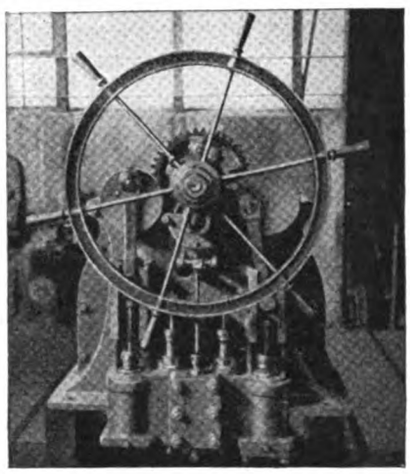

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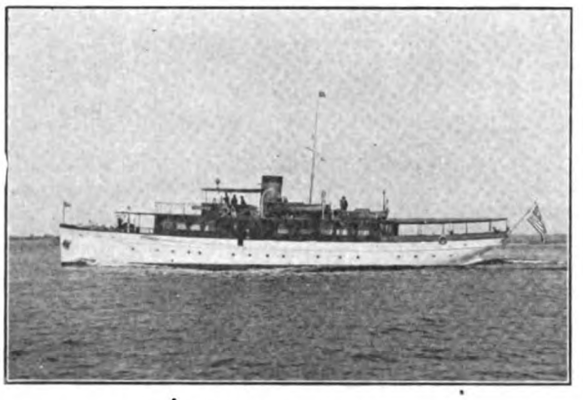

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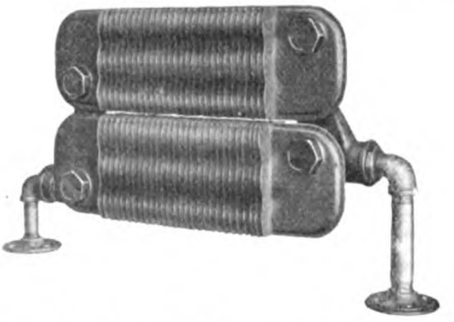

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General Electric Co.
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Kearfott Engineering Co.
McIntosh & Seymour Corp.
Westinghouse Electric & Mfg. Co.
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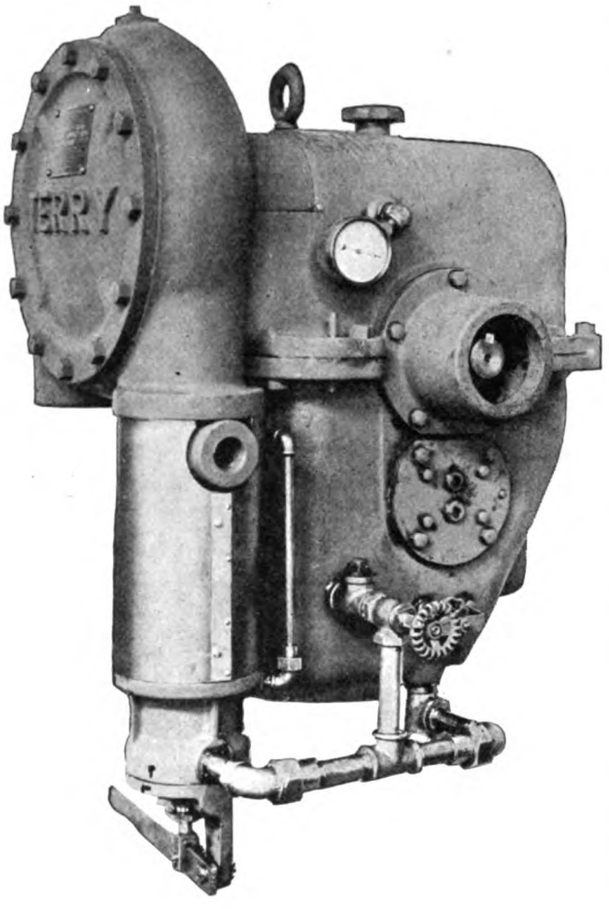
High Efficiency Turbine for Pulverized Fuel Auxiliaries



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We offer the Terry type "W-10" steam turbine and reduction gear, having its governing mechanism conveniently located and with adjustments for the accurate speed control of the unit.

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This type of drive is highly recommended for pulverizer and fans, because of its speed control, protection from dust, high efficiency, light weight and compact construction.

Tested and ready for this new application in the marine field the Terry type "W-10" combined steam turbine and gear is pre-eminently fitted for driving pulverized fuel auxiliaries.

KEARFOTT ENGINEERING CO., Inc.

117 Liberty St. **New York**

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Lidgerwood Mfg. Co.

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Hill Diesel Engine Co.
Standard Motor Construction Co.

Engines, Mooring
Manitowoc Shipbuilding Corp., The

Engines, Oil
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Bethlehem Steel Co.
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Hill Diesel Engine Co.
Ingersoll-Rand Co.
Kearfott Engineering Co.
Lombard Governor Co., The
McIntosh & Seymour Corp.
New London Ship & Engine Co.
Standard Motor Construction Co.
Winton Engine Co., The
Worthington Pump & Machinery Corp.

Engines, Pleasure Boat
Bessemer Gas Engine Co.

Engines, Propelling
Bessemer Gas Engine Co.
Bethlehem Shipbuilding Corp.
Bethlehem Steel Co.
Busch-Sulzer Bros.-Diesel Engine Co.
Hill Diesel Engine Co.
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Davis Engineering Corp.
Griscom-Russell Co.
Hill Diesel Engine Co.
Ingersoll-Rand Co.
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Worthington Pump & Machinery Corp.

Engines, Steam
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Ingersoll-Rand Co.
Manitowoc Shipbuilding Corp., The

Engines, Steering
Bethlehem Steel Co.
Manitowoc Shipbuilding Corp., The

Engines, Vertical Steam
Bethlehem Steel Co.

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(See Steam Specialties)

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Fittings, Boiler Room
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Jerguson Gage & Valve Co.
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Lunkenheimer Co., The

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Lunkenheimer Co., The
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Fittings, Gas Fixture
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Reading Steel Castings Co.

Flanges, Pipe
Dart Mfg. Co.

Flanges, Steel
Reading Steel Castings Co.

Floating Dry Docks
(See Dry Docks)

Floor Plates
(See Plates, Steel Floor)

Floors, Cork Composition
Bonded Floors Co., Inc.

Flooring, Tile
Bonded Floors Co., Inc.

Flue Cleaners
(See Boiler Flue Cleaners)

Forced Draft
(See also Blowers)
De Laval Steam Turbine Co.
General Electric Co.
Kearfott Engineering Co.
Sturtevant Co., The B. F.
Westinghouse Elec. & Mfg. Co.

Forgings, Bronze
Hyde Windlass Co.

Forgings, Iron and Steel
Bethlehem Steel Co.
Charleston Dry Dock & Machine Co.
Newport News Shipbuilding & Dry Dock Co.

Freight-Handling Equipment
General Electric Co.
Lidgerwood Mfg. Co.
Westinghouse Elec. & Mfg. Co.

Fresh Water Service Pumps
Nash Engineering Co.

Fuel Oil Burners
Babcock & Wilcox Co.
Bethlehem Shipbuilding Corp., Ltd.
Coen Co., Inc.
Morse Dry Dock & Repair Co.
Peabody Engineering Corp.
Ray Mfg. Co., W. S.

Fuel Oil Heaters
Bethlehem Steel Co.
Coen Company
Griscom-Russell Co.

Furnace Bridge Walls
Kearfott Engineering Co.

Furnaces, Corrugated
American Welding Co.

Furnace, Doors.
American Welding Co.

Furnace, Fronts.
American Welding Co.

Furniture, Manufactures
Rex Cabinet & Linoleum Co.

Furniture, Repairs
Rex Cabinet & Linoleum Co.

Fusible Plugs
Griscom-Russell Co.
Lunkenheimer Co., The

Gage Cocks
Jerguson Gage & Valve Co.
Lunkenheimer Co., The
Sands & Son Co., A. B.

Gage Glasses
Jenkins Brothers
Jerguson Gage & Valve Co.
Lunkenheimer Co., The
Powell Co., The William

Gages, Draft
Peabody Engineering Corp.
Pneumercator Co.

Gages, Recording
Bristol Co., The.

Gages, Reflex Water
Jerguson Gage & Valve Co.

Galvanizing Materials
Sands & Son Co., A. B.

Gas Engine Specialties
Lunkenheimer Co., The

Gaskets, Copper and Steel
(Also see packing)
American Spiral Pipe Co
Griscom-Russell Co.

Gaskets, Metallic
Smooth-On Mfg. Co.

Gears
De Laval Steam Turbine Co.
General Electric Co.
Sturtevant Co., The B. F.
Westinghouse Electric & Mfg. Co.

Gears, Worm Reduction
De Laval Steam Turbine Co.

General Welding and Cutting Equipment
(See Welding and Cutting Apparatus and Supplies)

Generating Sets, Diesel Electric
Hill Diesel Engine Co.

Generating Sets
Engberg's Elect. & Mech. Works
General Electric Co.
Hill Diesel Engine Co.
Sturtevant Co., The B. F.
Westinghouse Electric & Mfg. Co.
Worthington Pump & Machinery Corp.

Generators
Engberg's Elect. & Mech. Works
Hill Diesel Engine Co.

Glue
Ferdinand & Co., L. W.

Glue, Caulking.
Ferdinand & Co., L. W.

Generators, Electric
Diehl Manufacturing Co.
Hill Diesel Engine Co.
Westinghouse Elec. & Mfg. Co.

Governors
Cory & Son, Inc., Chas.

Governors, Pump
Atlas Valve Co.
Chaplin-Fulton Mfg. Co.

Graphite, Flake
Dixon Crucible Co., Joseph

Graphite, Grease
Dixon Crucible Co., Joseph

Graphite, Paint
Dixon Crucible Co., Joseph

Grate Bars
Kearfott Engineering Co.

Grease Cups
Lunkenheimer Co., The

Grease Extractors
Davis Engineering Corp.
Griscom-Russell Co.

Grinders—Electric and Pneumatic
Cleveland Pneumatic Tool Co., The
Ingersoll-Rand Co.

Gypseys
American Engineering Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.

Gyro-Compass
Sperry Gyroscope Co.

Gyro-Pilot
Sperry Gyroscope Co.

Halyards, Italian Signal
Fitler Co., Edwin H., The

Hammers, Pneumatic
(See Pneumatic Tools)

Hardware, Deck and Cabin
du Pont de Nemours Co., Inc., E. I.
Topping Brothers

Hardwood
(See Lumber)

Hawser Pipes
Kearfott Engineering Co.

Hawsers—Manila
(Also see Rope and Wire Rope)
Columbian Rope Co.
Fitler Co., Edwin H., The

Heaters (Bath, Lavatory Shower, etc.)
Griscom-Russell Co.
Kearfott Engineering Co.
Sturtevant Co., The B. F.
Sands & Son Co., A. B.
Rome Brass Radiator Co.

Heaters, Fuel Oil
(See Fuel Oil)

Hemp
(See Twine)

Hoisting Engines
American Engineering Co.
Hill Diesel Engine Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.

Hoisting and Transmission Rope
(See Rope)

Hoists
Ingersoll-Rand Co.

Hoists, Electric
American Engineering Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.
Westinghouse Elec. & Mfg. Co.

Holders-On
Ingersoll-Rand Co.

Horizontal Punches
Cleveland Punch & Shear Works Co.

Horns, Fog
Cory & Son, Inc., Chas.

Hose
Cleveland Pneumatic Tool Co., The
Goodrich Rubber Co., The B. F.
Ingersoll-Rand Co.

Hose Coupling
Cleveland Pneumatic Tool Co., The
Ingersoll-Rand Co.

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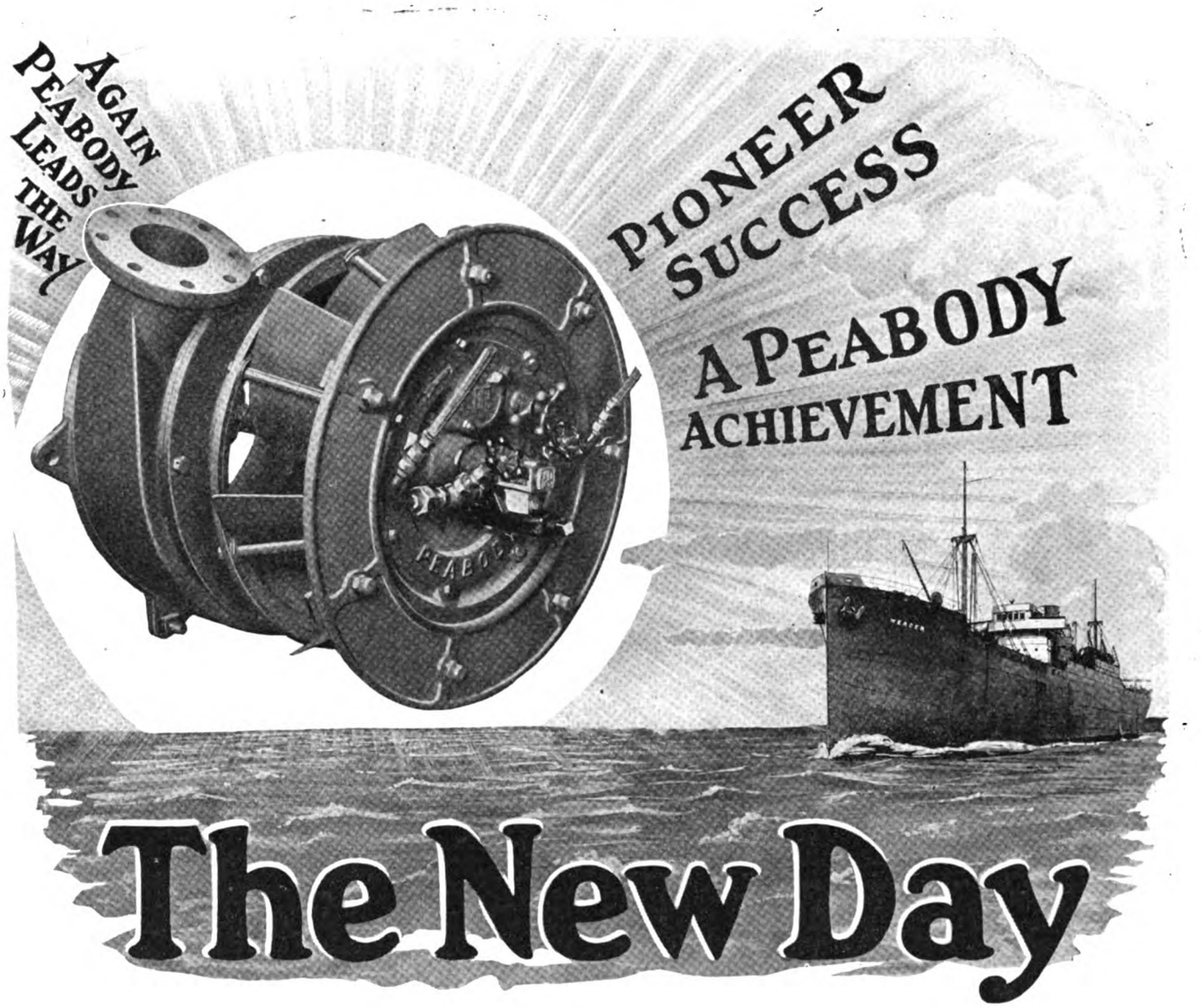

Upon the sailing of the SS. Mercer, with powdered coal fired boilers driving her to new fuel economy records, the fact stands forth that:—

IT REMAINED FOR PEABODY ENGINEERING EXPERIENCE TO CREATE

PEABODY

POWDERED COAL BURNERS

to make the firing of that low cost fuel a practical success in Scotch Marine Boilers.

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Hose, Metal, Flexible, Bronze, Galvanized, Steel.
Penna. Flexible Metallic Tube Co.

Hose, Metal, Gasoline, Oil, Steam
Penna. Flexible Metallic Tube Co.

Hose, Metal, Diesel Engine Exhaust
Penna. Flexible Metallic Tube Co.

Hose, Metal, Flexible Rivet Gun
Penna. Flexible Metallic Tube Co.

Hose, Metal, Flexible, Tank Car Unloading Connections
Penna. Flexible Metallic Tube Co.

Hulls, Steel
Ellis Channel System of Steel Hull Construction

Humidifiers
Griscom-Russell Co.

Hydraulic Fittings
(See Fittings, Hydraulic)

Hydraulic Presses and Other Machinery
Warren Steam Pump Co.

Hydrostats
Atlas Valve Co.

Ice Machines
(See Refrigerating Machinery)

Interior Decorating and Upholstering
Rex Cabinet & Linoleum Co.

Interlocking Rubber Tiling
Griscom-Russell Co.

Iron, Cements
Smooth-On Mfg. Co.

Iron, Chain
Burden Iron Co.

Iron, Foundry Cements
Smooth-On Mfg. Co.

Iron Pipe
(See Pipe)

Iron, Refined
Burden Iron Co.

Iron, Staybolt
Burden Iron Co.

Jacks—Steamboat (Ratchet Pulling)
Griscom-Russell Co.

Journal Bearings
(See Thrust Bearings)

Jute
Columbian Rope Co.

Kerosene Engines
Hill Diesel Engine Co.
Standard Motor Construction Co.

Lamps
General Electric Co.

Lamps, Signals and Fixtures
Cory & Son, Inc., Chas.
Westinghouse Electric & Mfg. Co.

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(See Shipbuilders)

Lead, White, Red
National Lead Co.

Lights, Electric
(See Electric Lights)

Lights, Emergency Electric
Willard Storage Battery Co.

Lines—Towing, Buoy
(See Rope)

Linoleum
Bonded Floors Co., Inc.
Rex Cabinet & Linoleum Co.

Loading and Unloading Equipment
(See Freight-Handling Equipment)

Locomotive Cranes
(See Cranes)

Lubricants, Oil and Grease
Associated Oil Co.
Texas Co., The
Vacuum Oil Co.

Lubricating Oil Service Pumps
Nash Engineering Co.

Lubricating Oil Transfer Pumps
Nash Engineering Co.

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Lunkenheimer Co.

Lumber
McKenna Co., Inc., J. F.

Machine Tools
Cleveland Pneumatic Tool Co.

Machinery, Marine
Bethlehem Steel Co.
Manitowoc Shipbuilding Corp., The

Manganese Bronze Castings
Bethlehem Steel Co.
Columbian Bronze Corp.
Griscom-Russell Co.
Hyde Windlass Co.

Manila and Sisal Rope
(See Rope)

Manifolds
Cleveland Pneumatic Tool Co.
Ingersoll-Rand Co.

Marine Boilers
Manitowoc Shipbuilding Corp.

Marine Cableways
Lidgerwood Mfg. Co.

Marine Coatings
(See Anti-Rust Coatings)

Marine Decking
(See Decking)

Marine Engines
(See Engines, Propelling)

Marine Engineers
(See Engineers, Consulting)

Marine Forgings
(See Forgings)

Marine Heaters
(See Heaters)

Marine Paint
Wailes Dove-Hermiston Corp.

Marine Railways
(See Dry Docks)

Marine Ranges
(See Ranges, Galley)

Marine Refrigeration
(See Refrigerating Machinery)

Marine Repairs
(See Repairs, Marine, also Shipbuilders)

Marine Shafting
(See Shafting)

Marine Superheaters
Babcock & Wilcox Co.

Marine Wiring Devices
General Electric Co.
Westinghouse Elec. & Mfg. Co.

Mast Arm Rope
Roebling's Sons Co., J. A.

Masts, Tubular Steel
National Tube Co.

Metal Protection, Paints
(See Paints, Metal Protection)

Meters, Electric
General Electric Co.

Meters, Oil and Water
Worthington Pump & Machinery Corp.

Mooring Engines
American Engineering Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.

Mooring Lines
Roebling's Sons Co., J. A.

Motor Boats
(See Shipbuilders)

Motor Boat Supplies
General Electric Co.

Motors, Electric
Diehl Manufacturing Co.
Engberg's Elect. & Mech. Works
Sturtevant Co., The B. F.
Westinghouse Elec. & Mfg. Co.

Motors, Gasoline
(See Gasoline Engines)

Mufflers
Maxim Silencer Co., The

Multiwhirl Oil Coolers
Griscom-Russell Co.

Nails, Cut
Bethlehem Steel Co.
Reading Iron Co.

Naval Architects
Chapman & Co., O. C.
Cox & Stevens
Donnelly, Wm. T.
Dyson, Chas. W.
Ewertz, Eric H.
Farley & Co., Edward P.
Ferris, Theodore
Ford, Louis B.
Morrell, Robt. W.
Nord, Nils F.
Rossell & Thayer
Sharp, Geo. G.
Watts, J. Murray
Wells, Inc., John H.

Navigation Aids
Submarine Signal Corp.

Navigation Instruments
Federal Telegraph Co.
Sperry Gyroscope Co.
Submarine Signal Corp.

Needle Valves
(See Valves)

Nipples
Lunkenheimer Co., The

Nozzle, Acetylene
(See Acetylene Nozzle)

Nozzles
(See Hose Nozzles)

Oakum
Fitler Co., The Edwin
Stratford Oakum Co., Geo.

Oil Burners, Fuel
(See Fuel Oil Burners)

Oil Burning Equipment
Bethlehem Shipbldg. Corp.
Coen Co., Inc.
Morse Dry Dock & Repair Co.
Peabody Engineering Corp.
Ray Mfg. Co., W. S.

Oil Clarifiers
(See Clarifiers, Oil)

Oil Coolers
Griscom-Russell Co.

Oil Cups
Griscom-Russell Co.
Lunkenheimer Co., The

Oil, Cylinder
Associated Oil Co.
Vacuum Oil Co.

Oil Engine Generating Sets
Hill Diesel Engine Co.

Oil Engines
(See Engines, Oil)

Oil, Fuel
Texas Co., The

Oil Fuel Apparatus
(See Oil-Burning Equipment)

Oil Gages
Lunkenheimer Co., The

Oil Heaters and Coolers
Davis Engineering Corp.
Griscom-Russell Co.

Oil, Linseed
National Lead Co.

Oil Lubricating
Associated Oil Co.
Texas Co., The
Vacuum Oil Co.

Oil Purifiers
(See Purifiers, Oil)

Oiling Systems
(Also see Lubricators)
Lunkenheimer Co., The

Ore-Handling Machinery
(See Coal-Handling Machinery)

Ovens, Baking Electric
Westinghouse Elec. & Mfg. Co.

Oxy-Acetylene Welding and Cutting
Prest-O-Lite Co., Inc.

Packing, Iron
Smooth-On Mfg. Co.

Packing, Marine
Cooke Seal Ring
Quaker City Rubber Co.

Paint, Metal Protection
National Lead Co.
Wailes Dove-Hermiston Corp.

Panels, Interior and Exterior
Haskelite Mfg. Co.

Partitions
Haskelite Mfg. Co.

Phospohr Bronze Castings
Bethlehem Steel Co.
Columbian Bronze Corp.
Griscom-Russell Co.
Hyde Windlass Co.

Pile Drivers
Ingersoll-Rand Co.
Lidgerwood Mfg. Co.

Pilot House Control, Electric
General Electric Co.
Westinghouse Elec. & Mfg. Co.

Pipe
National Tube Co.
du Pont de Nemours Co., Inc., E. I.

Pipe Cutters
Trimont Mfg. Co.

Pipe Fittings
Atlas Valve Co.
Dart Mfg. Co.
du Pont de Nemours Co., Inc., E. I.

Pipe Flanges
(See Flanges)

Pipe Joint Compounds
Dixon Crucible Co., Joseph
Smooth-On Mfg. Co.

Pipe Signal, Wrought Iron
Reading Iron Co.

Pipe, Steel
National Tube Co.

Pipe Unions
Atlas Valve Co.
Lunkenheimer Co., The

Pipe Vises
Trimont Mfg. Co.

Pipe, Wrought Iron
Reading Iron Co.

Planers (Metal Working)
Cleveland Pneumatic Tool Co.

Plates, Boiler, Firebox, Etc.
Bethlehem Steel Co.
Lukens Steel Co.

Plugs and Receptacles (Watertight)
Cory & Co., Inc., Chas.

Pneumatic Drills
(See Pneumatic Tools)

Pneumatic Hammers
(See Pneumatic Tools)

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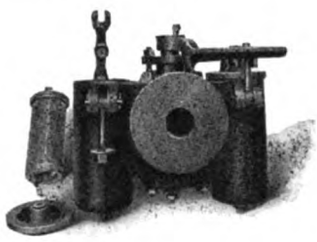
Continuous Service Always Assured

with

Coen Oil Heater—

Consists of two steel shells with integral heads and flanges. Oil enters heater between the two shells and passes upward in a spiral course to the top. Steam enters through a single straight pipe, and condensate is drawn off at the bottom. These heaters combine strength, flexibility and efficiency with compactness and light weight. There are no coils or tubes and they are easily cleaned.

Coen Duplex Strainer



Very simple in construction. There are no valves. A 90° turn of the handle changes from one basket to the other. Strainer Baskets have exceptionally large straining area and are easily cleaned.

AN INVITATION IS EXTENDED BY THE COEN COMPANY TO ENGINEERS AND OPERATORS TO VISIT OUR BOOTH NO. 15-B AT THE POWER SHOW AT GRAND CENTRAL PALACE, BEGINNING DEC. 5, WHERE WE WILL SHOW OUR NEW

—TRI-FUEL BURNER—

A Combination Pulverized Fuel-Gas and Oil Burner.

Incorporating in Our Combined Gas and Oil Burner—A Pulverized Fuel Burner of the Low Velocity Turbulent Type.

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Pneumatic Riveters
Ingersoll-Rand Co.

Pneumatic Separators
Griscom-Russell Co.

Pneumatic Tools
Cleveland Pneumatic Tool Co.
Ingersoll-Rand Co.

Presses
(See Hydraulic Presses)

Professional Cards
Barraja-Frauenfelder & Co.
Chapman & Co., O. C.
Cox & Stevens
Donnelly, Wm. J.
Dyson, Chas. W.
Ewertz, Eric H.
Farley & Co., Edward P.
Ferris, Theodore
Ford, Louis B.
McQuilling, T. A.
Morrell, Robert W.
Nord, Nils F.
Rossell & Thayer
Sharp, Geo. G.
Stein, Wm. Morrison
Watts, J. Murray
Wells, Inc., John H.

Projectors
(See Searchlights)

Propeller Shafts
(See Shafting)

Propeller Wheels
Bethlehem Shipbldg. Corp.
Columbian Bronze Corp.
Hyde Windlass Co.
Kearfott Engineering Co., Inc.

Propellers
du Pont de Nemours Co., Inc., E. I.

Propellers, Contra.
Bethlehem Steel Co.

Pump Liners
du Pont de Nemours Co., Inc., E. I.

Pumps and Pumping Machinery
Bethlehem Steel Co.
Blackmer Pump Co.
Cooke Seal Ring
Davidson Co., M. T.
Davis Engineering Corp.
Dean Bros. Pump Co.
De Laval Steam Turbine Co.
Griscom-Russell Co.
Hyde Windlass Co.
Ingersoll-Rand Co.
Nash Engineering Co.
Warren Steam Pump Co.
Westinghouse Electric & Mfg. Co.
Wheeler Mfg. Co., C. H.
Worthington Pump & Machinery Corp.

Pumps
Blackmer Pump Co.
du Pont de Nemours Co., Inc., E. I.
Hill Diesel Engine Co.
Ingersoll-Rand Co.
Nash Engineering Co.
Sands & Son Co., A. B.

Pumps, Ball Bearing
Nash Engineering Co.

Pumps, Centrifugal
Hill Diesel Engine Co.
Nash Engineering Co.

Pumps, Circulating
Bethlehem Steel Co.
Ingersoll-Rand Co.
Nash Engineering Co.
Worthington Pump & Machinery Co.

Pumps, Duplex Piston Pattern
Worthington Pump & Machinery Co.

Pumps, Fire Protection
Ingersoll-Rand Co.
Nash Engineering Co.
Worthington Pump & Machinery Co.

Pumps, Fuel Oil
Bethlehem Steel Co.
Coen Co., Inc.
Davidson Co., M. T.
Ingersoll-Rand Co.
Nash Engineering Co.
Warren Steam Pump Co., Inc.
Worthington Pump & Machinery Co.

Pumps, Multistage Centrifugal
Ingersoll-Rand Co.
Worthington Pump & Machinery Co.

Pumps, Refrigeration
Ingersoll-Rand Co.
Worthington Pump & Machinery Co.

Pumps, Rotary
Blackmer Pump Co.
Sands & Son Co., A. B.

Pumps, Steam
Bethlehem Steel Co.
Ingersoll-Rand Co.
Worthington Pump & Machinery Co.

Pumps, Vacuum
Bessemer Gas Engine Co.
Bethlehem Steel Co.
Ingersoll-Rand Co.
Nash Engineering Co.
Worthington Pump & Machinery Co.

Purifiers, Oil
De Laval Separator Co.
De Laval Steam Turbine
Griscom-Russell Co.
Sharples Specialty Co., The

Pyrometers
Bristol Co., The.

Quadrant Davits
(See Davits)

Radiators
Rome Brass Radiator Co.

Radio Apparatus
Federal Telegraph Co.

Ranges, Electric
Westinghouse Elec. & Mfg. Co.

Ranges, Galley
Marine Works, Inc., The
Sands & Son Co., A. B.
Stamford Foundry Co., The

Reamers
Cleveland Pneumatic Tool Co., The
Ingersoll-Rand Co.

Reclaiming Systems for Oil
De Laval Separator Co.
Sharples Specialty Co., The

Reducing Gears
(See Gears)

Reels for Hawsers
Roebling's Sons Co., J. A.

Refrigerating Machinery
Brunswick-Kroeschell Co.
Ingersoll-Rand Co.
Westinghouse Electric & Mfg. Co.
York Ice Machinery Corp.

Regulators, Damper
Atlas Valve Co.

Regulators, Pressure
Atlas Valve Co.

Repairs, Marine
Bethlehem Shipbuilding Corp.
Manitowoc Shipbuilding Corp.
Marine Works, Inc., The
Newport News Shipbuilding & Dry Dock Co.
Todd Shipyards Corp.

Revolution Counters
Cory & Co., Inc., Chas.

Rheostats
General Electric Co.
Westinghouse Elec. & Mfg. Co.

Rigging
(See Rope; also Wire Rope)

River Boats
(See Shipbuilders)

Rivet Busters, Rivet Clamps and Rivet Tongs
Cleveland Pneumatic Tool Co., The
Ingersoll-Rand Co.

Rivets
Burden Iron Co.

Riveters
(See Pneumatic Tools)

Rods, Welding
(See Welding Rods)

Roofing
Texas Co., The

Rope, Manila (Also See Wire Rope)
Columbian Rope Co.
Fitler Co., Edwin H., The

Rope Transmission
Columbian Rope Co.

Rotary Blowers
(See Blowers)

Safety Devices
(See Life Saving Devices)

Salt and Fresh Water Cooling Pumps
Nash Engineering Co.

Salt and Fresh Water Sanitary Pumps
Nash Engineering Co.

Seamless Steel Tubes
National Tube Co.

Searchlights
General Electric Co.
Sperry Gyroscope Co.

Sentinel Valves
(See Valves)

Separators, Air
Western Engineering Co.

Separators, Oil
Babcock & Wilcox Co., The
Bethlehem Steel Co.
De Laval Separator Co.
Sharples Specialty Co., The

Shafting (Seamless Steel)
du Pont de Nemours Co., Inc., E. I.
Kearfott Engineering Co.
National Tube Co.

Shim, Laminated
Laminated Shim Co.

Shipbuilders and Dry Dock Companies
Bethlehem Shipbuilding Corp.
Charleston Dry Dock & Machine Co.
Manitowoc Shipbuilding Corp.
Morse Dry Dock & Repair Co.
New London Ship & Engine Co.
Standard Motor Construction Co.
Sun Shipbuilding & Dry Dock Co.
Todd Shipyards Corp.

Ship Brokers
Cox & Stevens
Farley & Co., Edward P.
Ferris, Theodore
Watts, J. Murray

Ship Compositions
Wailes Dove-Hermiston Corp.

Ship Construction
Ellis Channel System of Steel Hull Construction
Isherwood Co., J. W.
Manitowoc Shipbuilding Corp.

Ship Fittings, Supplies and Equipment
Griscom-Russell Co.
Marine Works, Inc., The
Rex Cabinet & Linoleum Co.

Ship Glue
(See Glue)

Ship Operators
United American Lines

Ship Repairs
(See Dry Docks and Marine Railways)

Ship Stabilizers
Sperry Gyroscope Co.

Shipyards
(See Shipbuilders)

Shipyard Cranes
(See Cranes)

Shipyard Whirlers
(See Cranes)

Shop Cranes
(See Cranes)

Signaling Apparatus
Cory & Son, Inc., Chas.

Silencers, Marine Engine
Maxim Silencer Co., The

Slings, Wire Rope
Roebling's Sons Co., J. A.

Staybolt Iron
Bethlehem Steel Co.
Burden Iron Co.
Reading Iron Co.

Staybolts
Burden Iron Co.

Steam Engines
(See Engines)

Steam Gages
Ashton Valve Co.
Lunkenheimer Co., The

Steam Hoists
(See Hoisting Engines)

Steam Hose
Ingersoll-Rand Co.

Steam Pumps
(See Pumps)

Steam Separators
Griscom-Russell Co.

Steam Traps
Griscom-Russell Co.

Steam Turbines
Bethlehem Shipbuilding Corp.
De Laval Steam Turbine Co.
General Electric Co.
Kearfott Engineering Co.
Sturtevant Co., The B. F.
Westinghouse Electric & Mfg. Co.

Steam Turbine Dynamos
De Laval Steam Turbine Co.
General Electric Co.
Kearfott Engineering Co.
Westinghouse Electric & Mfg. Co.

Steamship Companies
United American Lines

Steel Castings
(See Castings, Steel)

Steel Pipe
(See Pipe, Steel)

Steel Shafting
(See Shafting)

Steering Engines
American Engineering Co.
Bethlehem Steel Co.
Hyde Windlass Co.
Kearfott Engineering Co.
Lidgerwood Mfg. Co.
Manitowoc Shipbuilding Co.

Steering Gears
American Engineering Co.
Bethlehem Shipbldg. Corp.
Hyde Windlass Co.
Lidgerwood Mfg. Co.
Manitowoc Shipbuilding Corp., The

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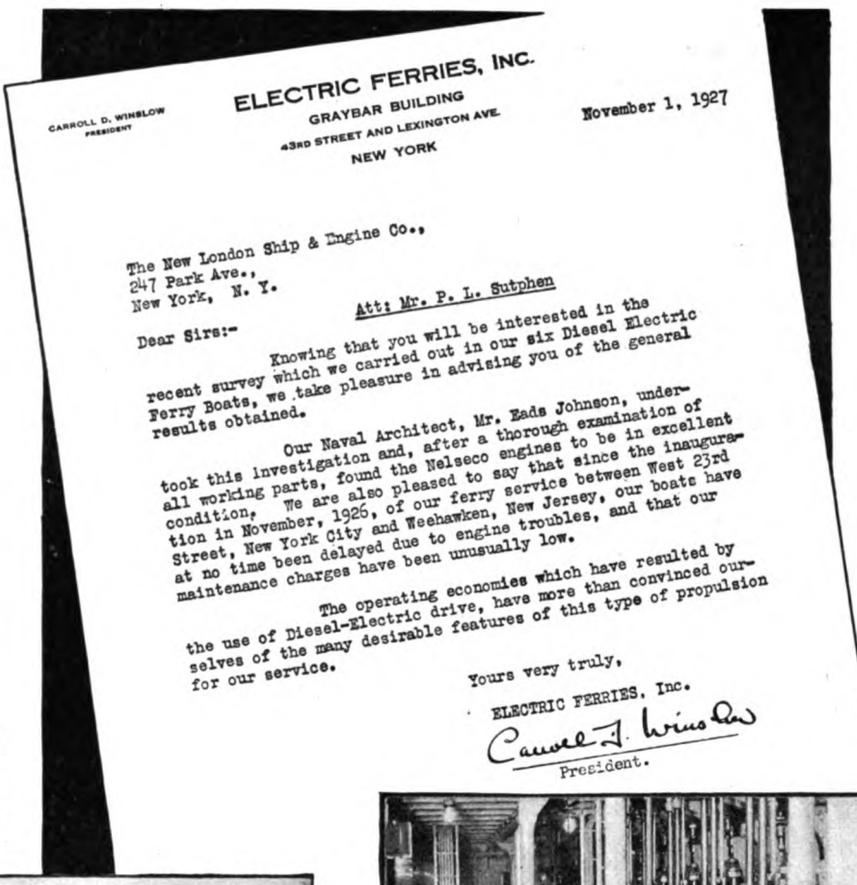


CARROLL D. WINSLOW
PRESIDENT

ELECTRIC FERRIES, INC.
GRAYBAR BUILDING
43RD STREET AND LEXINGTON AVE.
NEW YORK

November 1, 1927

The New London Ship & Engine Co.,
247 Park Ave.,
New York, N. Y.

Att: Mr. P. L. Sutphen

Dear Sirs:-

Knowing that you will be interested in the recent survey which we carried out in our six Diesel Electric Ferry Boats, we take pleasure in advising you of the general results obtained.

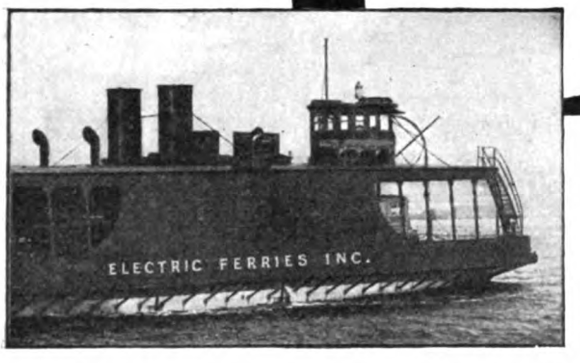
Our Naval Architect, Mr. Eads Johnson, undertook this investigation and, after a thorough examination of all working parts, found the Nelseco engines to be in excellent condition. We are also pleased to say that since the inauguration in November, 1926, of our ferry service between West 23rd Street, New York City and Weehawken, New Jersey, our boats have at no time been delayed due to engine troubles, and that our maintenance charges have been unusually low.

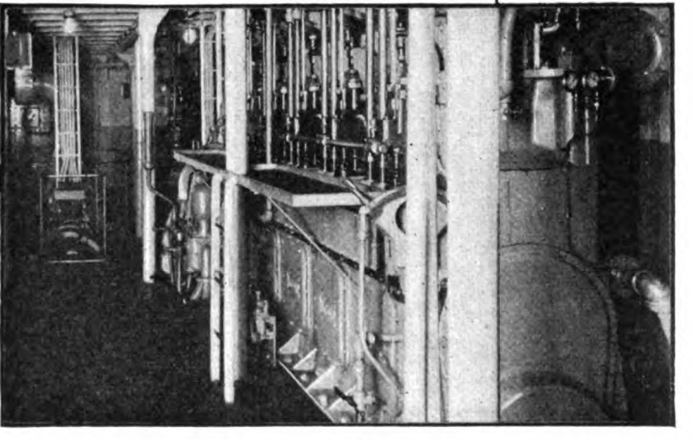
The operating economies which have resulted by the use of Diesel-Electric drive, have more than convinced ourselves of the many desirable features of this type of propulsion for our service.

Yours very truly,
ELECTRIC FERRIES, Inc.
Carroll D. Winslow
President.

Engine room of the "Governor Moore," another of the Electric Ferries, Inc., boats. The "Governor Moore" (length Over All, 155 ft.; Beam, 48 ft.; Draft, 8 1-2 ft.) is powered with 2 350 B.H.P. at 280 R.P.M. type 6 MI-18 Nelseco Diesel engines. Speed, 12.8 miles per hour.

The "Charles W. Culkin," a Nelseco-powered unit of the Electric Ferries, Inc., fleet running between W. 23d St., New York City and Weehawken, New Jersey.





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AFTER a year's experience with Nelseco Diesel Engines, Mr. Carroll D. Winslow, President of Electric Ferries, Inc., is "more than convinced" of Diesel advantages. His Nelseco Diesels have given "unusually low maintenance charges" and "freedom from engine trouble."

Let us know what type of boat you own and we will forward operating figures on similar Nelseco-engined vessels. Nelseco Engineers will be glad to call and discuss your power problems.

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25 North Dearborn Street

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247 Park Avenue, New York City

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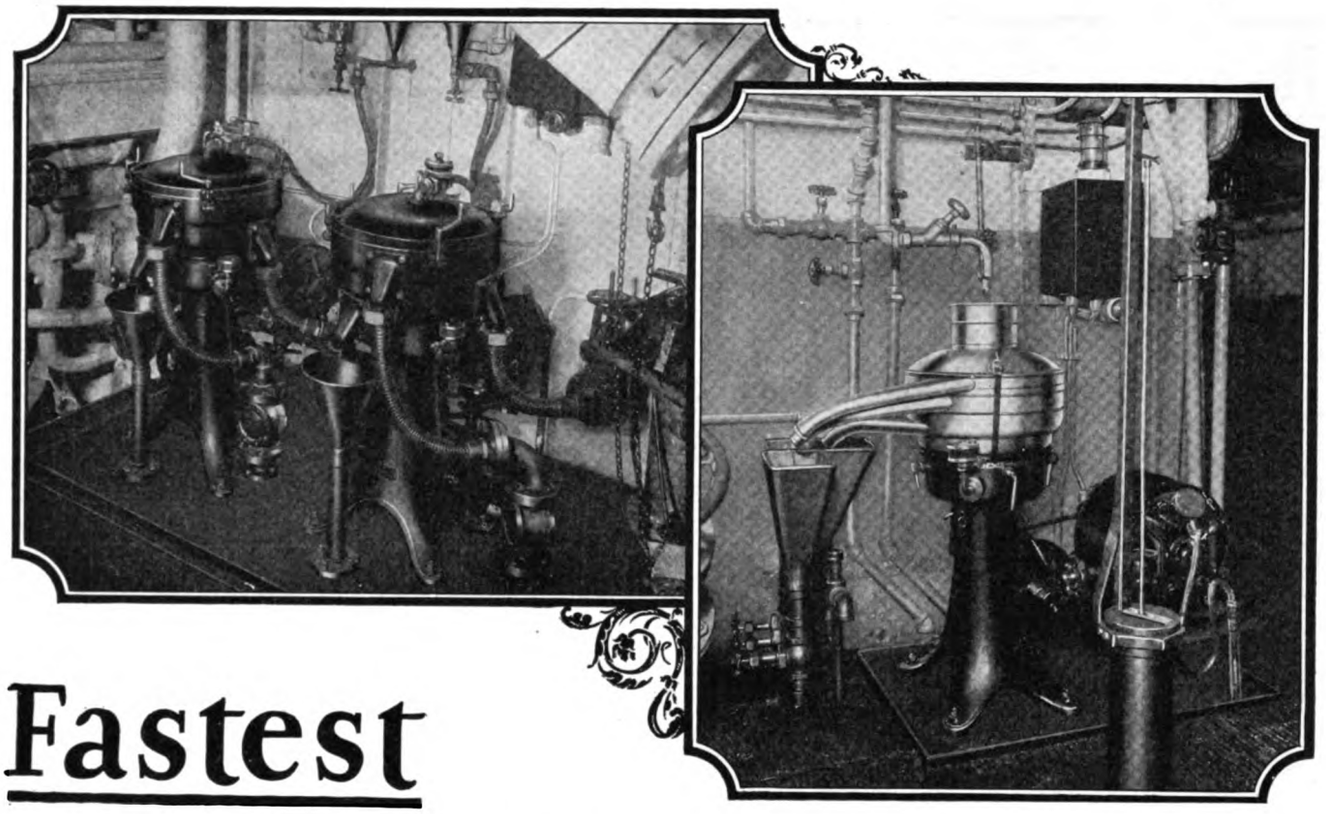

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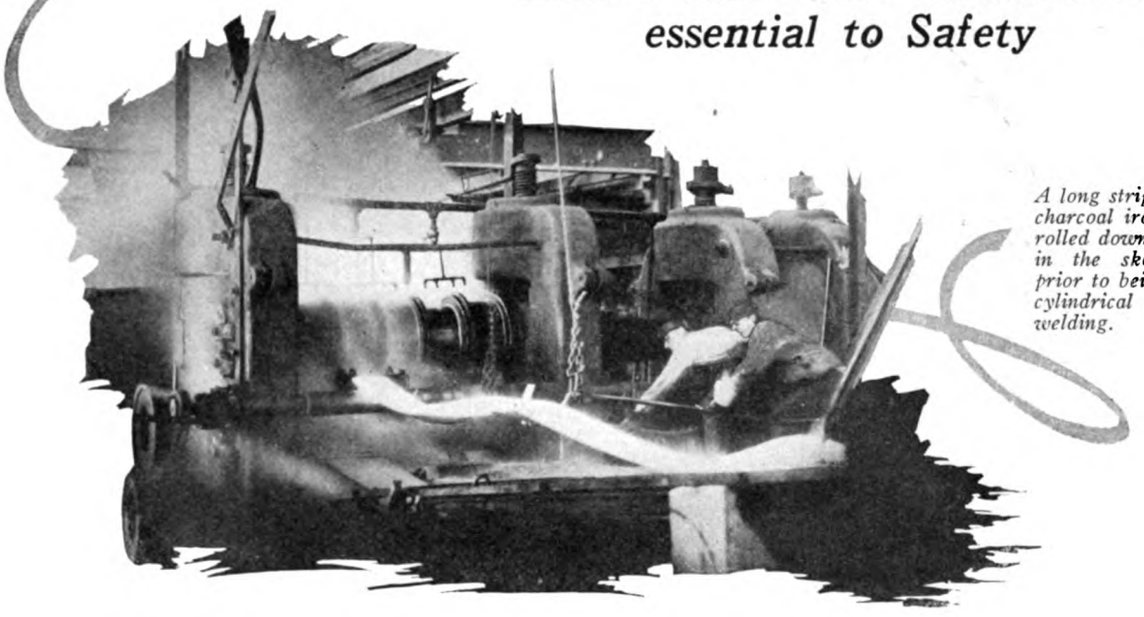

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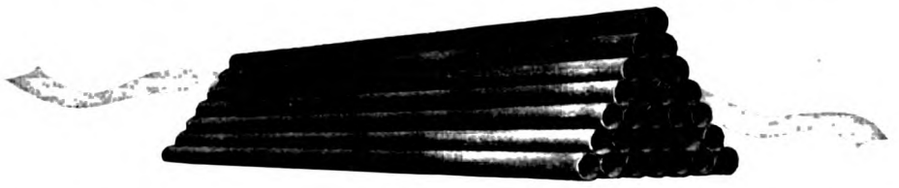

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